AUGUST, 1953

Industrial FINISHING

Published Monthly in the Interest of Product Cleaning and Painting by Practical Publications, Inc., 1162 N. Meridian Street, Indianapolis 4, Ind.

"KNOW HOW"

In the laboratories of Snyder Brothers Company, men of vast experience formulate finishes to meet customers' regular and special requirements. These men have the "know how" that is responsible for the exceptional quality of Snyder Brothers materials. From stains and fillers to top coats—quality is the outstanding feature.

Pictured above is partial view of our new lacquer laboratory completed last year.

- Lacquers
- Glazes
- Sealers
- Fillers
- Toners
- NGR Stains
- Pigmented Wiping Stains

Snyder BROTHERS COMPANY
Manufacturers of Quality INDUSTRIAL LACQUERS

P. O. Box 548 — TOCCOA, GEORGIA

Write, wire or phone us! We offer a complete technical service. Speedy truck delivery.

THE GREATEST WALLOP OF THEM ALL . . .

. . . IC POLYESTERS CAN TAKE IT!

When the recent A-Bomb rocked the Nevada desert, IC Polyesters were there. In a test house, erected 3,500 feet from ground zero, were a number of mannequins in various positions simulating human beings.

Seconds after the blast the house was a shambles. The roof blew away, glass and plaster flew, timbers fell, and the walls were charred from the wave of heat.

Two days later, when inspection teams were permitted to enter the area, though strewn around in grotesque positions, the mannequins were relatively unharmed.

To take this kind of Sunday punch they HAD to be STURDY. Ten years experience in the development and manufacture of IC Polyester Resins plus the fabricating skill of the L. A. Darling Company, Bronson, Michigan, made this outstanding performance possible.

If you have a fabricating problem where TOUGHNESS counts, call your nearest IC Finishes Division representative or write Commercial Resins Department, at either Cincinnati, Ohio or Newark, New Jersey.

Photographs courtesy Federal Civil Defense Administration

Interchemical Corporation

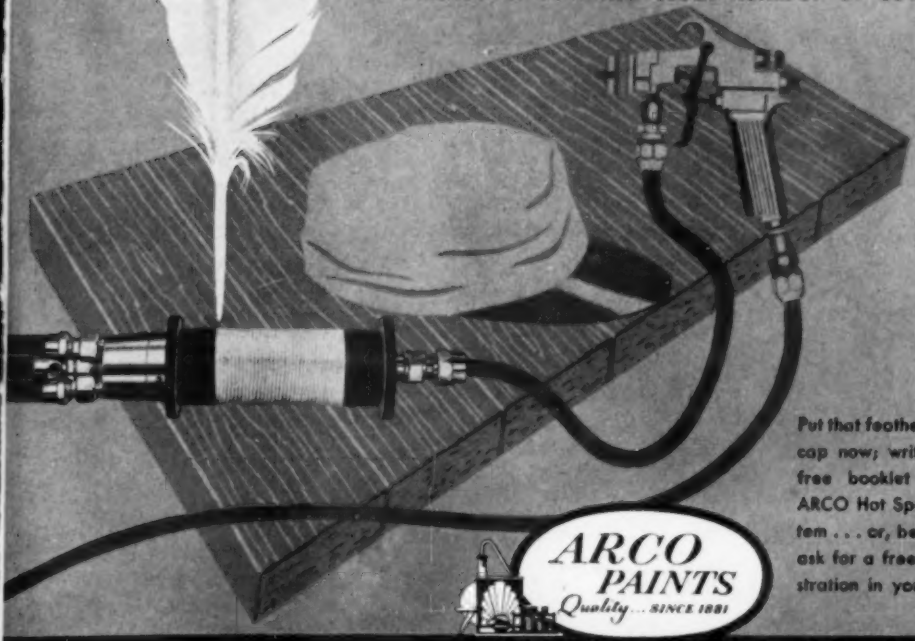
Finishes Division

FACTORIES: CHICAGO, ILL. • CINCINNATI, OHIO • ELIZABETH, N. J.
LOS ANGELES, CAL. • NEWARK, N. J.

IT'S A *Feather* IN YOUR CAP

when you put the lightweight, efficient ARCO Control-Temp Heater to work on your hot-spray finishing jobs.

Smaller than a painter's cap, lighter than a spray gun, this amazing bantam heat exchanger, coupled with the ARCO Hot Spray System, takes a load off the painting crew . . . steps up production . . . slashes costs up to 50% . . . turns out smooth, sleek finishes in half the usual number of coats.



Put that feather in your cap now; write for a free booklet on the ARCO Hot Spray System . . . or, better still, ask for a free demonstration in your plant.

ARCO PAINTS
Quality ... SINCE 1881

TESTED *FIRST* TO *LAST!*

THE ARCO COMPANY, 7301 BESSEMER AVENUE • CLEVELAND 27, OHIO

A SUBSIDIARY OF AMERICAN-MARIETTA COMPANY

ARCO COMPANY OF CALIFORNIA, LTD. 745 E. 59th ST. • LOS ANGELES 1, CAL.

finish ADDS TO THE VALUE OF

TRADITIONAL TABLES BY HAMMARY

Tables by the Hammary Manufacturing Corporation are famous for outstanding value. The mahogany finishes, created in our studios, are an important part of that value. Their rich beauty and lasting durability add to customer appeal. Their practicality in production lowers operating overhead.

We invite inquiries from manufacturers who are interested in finishes that are custom created for individual production requirements, and maximum saleability of the finished product.

The Better the Finish The Better the Buy

GRAND RAPIDS VARNISH CORPORATION

GRAND RAPIDS, MICHIGAN

Makers of the Famous Guardsman Finish and Guardsman Cleaning Polish

AUGUST, 1953
Vol. XXIX, No. 10

CCA

A monthly magazine for finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where product surface cleaning and finishing are major operations in the manufacture of parts and products.

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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29 TWENTY-NINTH YEAR OF PUBLICATION

Changed Design Saved . . . . Sometimes we can go too far using complicated automatic machines, especially if they get out of order too easily and too often, and if what they do is merely to satisfy someone's whim about a detail of questionable importance.

Wm. M. Bristol III points to what was done.

Bristol Myers Co. corrected such a situation when it discarded a special machine developed to position tooth paste tubes so that a single printed name and design would be "just so" in relation to the end crimping. It always gave trouble. A slight design change was made, repeating the same design and lettering three times equidistantly around every tube. This way the lettering is visible regardless of which way the tube is held or laid down while in service. Now the machine isn't needed.

Machines in the filling line include a tube filler and crimper, a cartoner, a bundler and an automatic weight checker; all occupy a space of only 10x50-ft. and fill 185 tubes per minute.

* * *

Wide Aluminum Sheets. Reynolds Metals Co. has increased the width of their corrugated aluminum roofing and siding sheets from 26-in. to 48-in. Result: A smaller percentage of metal, used at lap joints, fewer fasteners needed and fewer pieces to handle to cover a specified area.

* * *

Flat Latex Paint. A latex base paint especially formulated to finish interiors in new construction is announced. Called Professional Ultra Flat Latex Paint, it combines economy, speed and single-coat application with unusual covering and sealing qualities. An absolute flat finish, it may be sprayed, brushed or rolled on and dries in about half an hour.

Developed after more than five years' research, this latest finish employs an exclusive new vehicle to which latex has been added.

Professional Ultra Flat Latex gives off no objectionable odor; a room painted with it may be used almost

Pardon please

BUT DON'T YOU KNOW HOW MUCH YOUR

"FINISH" IS SHOWING?

May we suggest that since this is our **Thirtieth** year of service to Furniture Manufacturers—we **should** be, and we are, able to solve your "Finish" problems.

Our latest developments include such items as **totally transparent, permanently Water White Lacquers and Sealers,** TONE-FILL, STAIN-FILL, TINTONE and numerous other outstanding products to enhance beauty and provide better finishes with improved speed and economy.

"From the start consider the Finish"

V. J. DOLAN & COMPANY, INC.

Manufacturers of "Unquestionable Quality"
INDUSTRIAL FINISHES
1830 N. Laramie Avenue Chicago 39, Ill.
Berkshire 7-0100

CREATES

BUYING DESIRE

if you see a TV set that stands out because of its beautiful finish, grace, and design, you'll be tempted to buy it.

Merchandising-wise TV manufacturers know the importance of a beautiful cabinet finish—in moving their products from the dealers' floor to the prospect's home.

That's why Gilbert Spruance finishing materials are favored by America's leading TV manufacturers. They lend the Eye-Appeal so important to the home maker.

We are called upon every day to meet exacting specifications of TV cabinet makers. Our expert sales-service representatives could be most helpful in improving your finish.

THE GILBERT SPRUANCE COMPANY

PHILADELPHIA 34, PA. • WINSTON-SALEM, N. C.

immediately. Non-combustible, it acts as a fire retardent, eliminating fire hazard when it is sprayed. No dangerous solvents are needed. Brushes or spray equipment may be cleaned quickly and simply with soap and water after use.

* * *

Steam Cleaning Nozzle. A new type of steam cleaning nozzle has been developed. It is flat instead of round or rectangular, and it has a patented center blade. This feature is said to increase the efficiency of the steam blaster by 40%.

The blade reduces the effect of eddy turbulence at the orifice of the nozzle, and creates a pressure differential between the two flat planes of steam. This action produces a knife-like cutting effect at the point where the planes converge.

* * *

For Those Leaky Openings a new fabric reinforced black synthetic rubber sealer ribbon has been developed. It is pressure sensitive and is applied just like masking tape. Adhesion properties are such that the ribbon will stay in place on vertical or overhead surfaces during assembly operations. Correct procedure is to press the ribbon on the surface before riveting, screwing or bolting the second surface to the first. It can be stripped off and reapplied if necessary.

Should be excellent in pressureized spray rooms or in the finishing room to keep out dust and drafts.

* * *

Moisture Detector. A procedure has been developed to determine small amounts of water in solvents, thinners, plasticizers, higher alcohols, etc., without the use of heat.

It is a simple process. Using a calibrated dropper, each drop of Mois-

(Continued on page 122)

Are You In This Fix?

Here's A Way Out —

LET POTTER HELP YOU SAVE MONEY SAFELY ON

Thinners

We make nothing but **thinners**—For over a quarter of a century, we have been saving money for big and little customers. They like us because we make the thinner they want at a **money-saving price.**

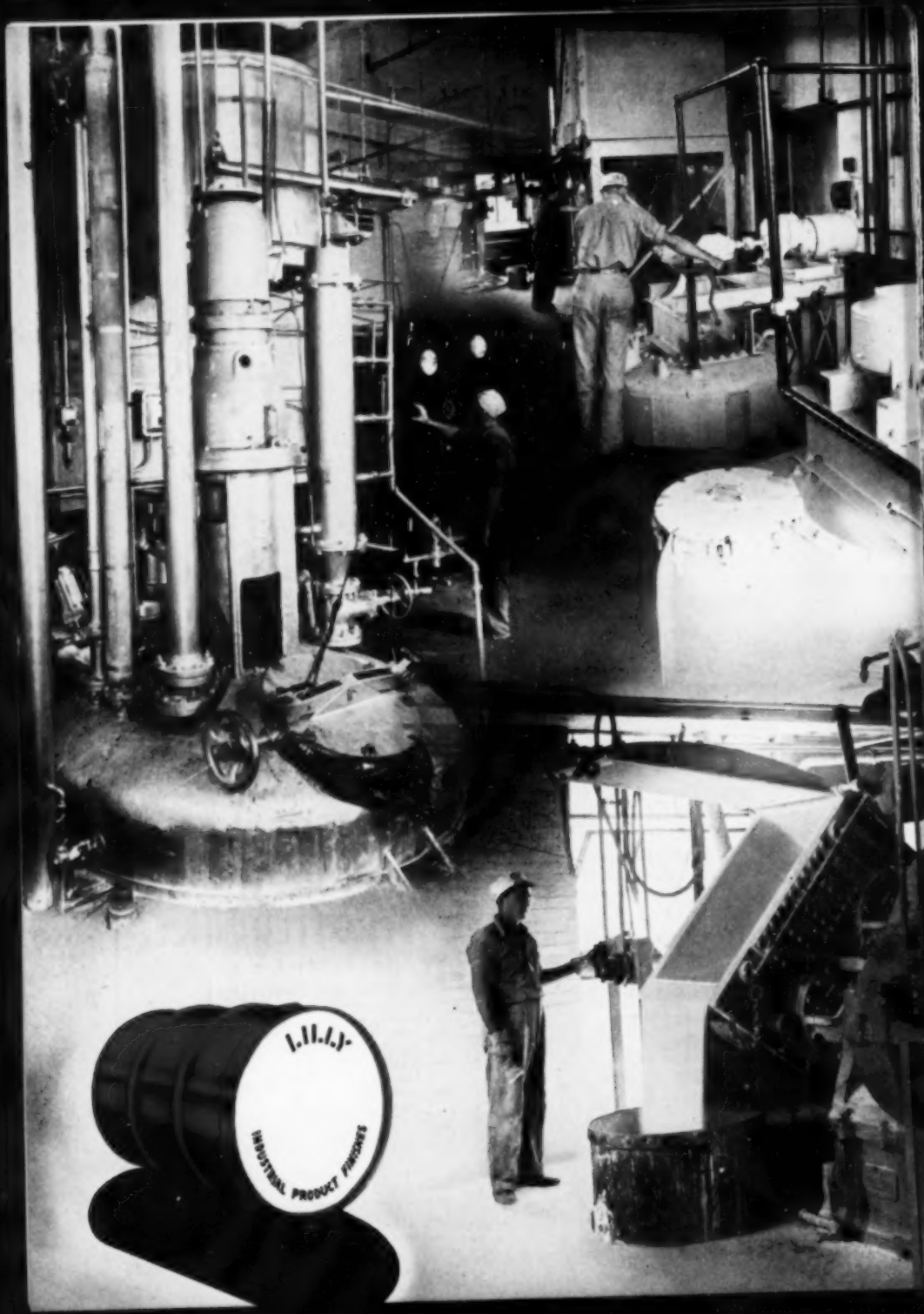
Let us show you how a Lacquer Thinner **SPECIALIST** can supply you with the **right** Thinner . . . and still save you money.

Just fill out form below and mail today. We'll work out a Thinner *especially for you*, and send a sample. We know we can **save** you money.

POTTER PAINT CO., INC.
CORTLAND 1, N. Y.
THINNER SPECIALISTS

The product we make is:_____
We use Lacquer Thinner for:
☐ Spray ☐ Dip ☐ Cleaning ☐ Other_____
We use Lacquer Thinner on:
☐ Metal ☐ Wood ☐ Other_____
We want it to dry:
☐ Fast ☐ Slow ☐ Medium

Name_____
Address_____
City_____ Zone____ State_____


I.I.I.J.
INDUSTRIAL PRODUCT PRODUCTS

Maps and Globes by CRAM—

"Coatings by Lilly"

One of the largest . . . oldest and best-known producers of globes and maps is the Geo. F. Cram Company, Indianapolis. Distribution of their products is worldwide.

About half of their production goes for school use. Some are used commercially, and there's an increasing demand for globes in the home where they add a distinctive, decorative touch.

Attractively designed, the globes are ornamental, as well as useful. Some are actually works of art, planned to fit almost any home decorative scheme.

Lacquers used to coat the Cram globes and maps, and various coatings used for finishing globe mountings were developed especially for this purpose by LILLY VARNISH COMPANY.

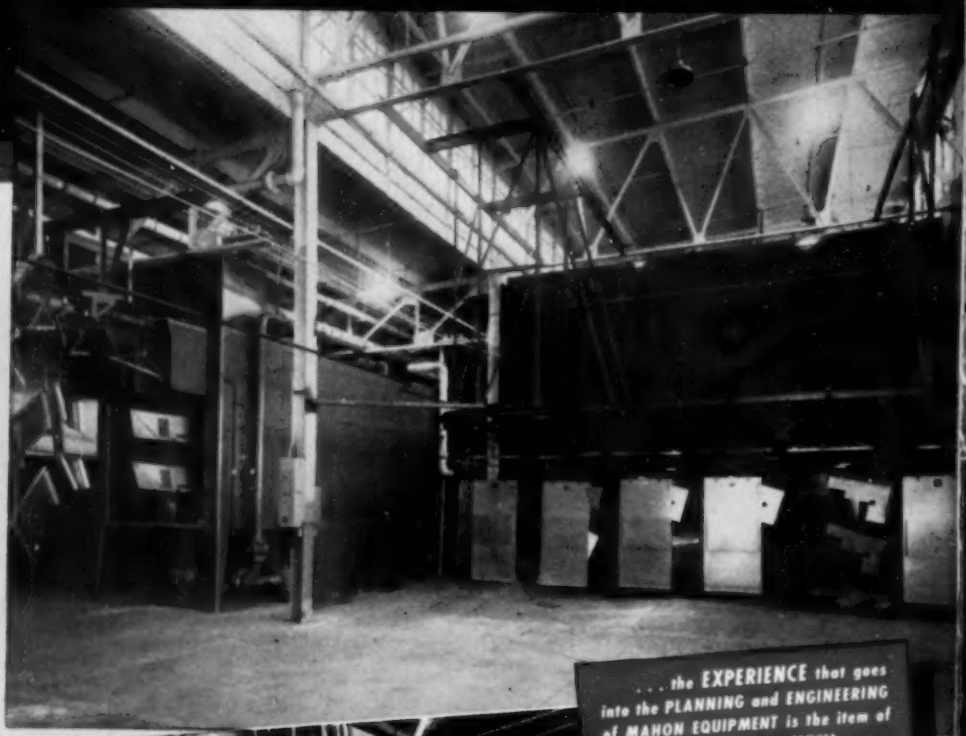
Another typical example of Lilly coatings at work for industry. Development and production of coatings for specific use—whatever the application might be—is an important part of our technical services designed to help industry in the field of finishing.

Lilly VARNISH COMPANY
666 S. CALIFORNIA STREET
INDIANAPOLIS, INDIANA

Serving industry with all types of product finishes and coatings:
VARNISHES • LACQUERS • ENAMELS
METAL LITHO COATINGS • STAIN and WOOD FILLERS

Affiliated companies in High Point, North Carolina and Greenville, Mississippi

COMPLET



. . . the **EXPERIENCE** that goes into the **PLANNING** and **ENGINEERING** of **MAHON EQUIPMENT** is the item of **GREATEST VALUE** to **YOU!**

One of four Mahon Conventional Type Hydro-Filter Spray Booths with "Hydrabra" Panel Treatment of the Complete Mahon Painting System at American-Standard.

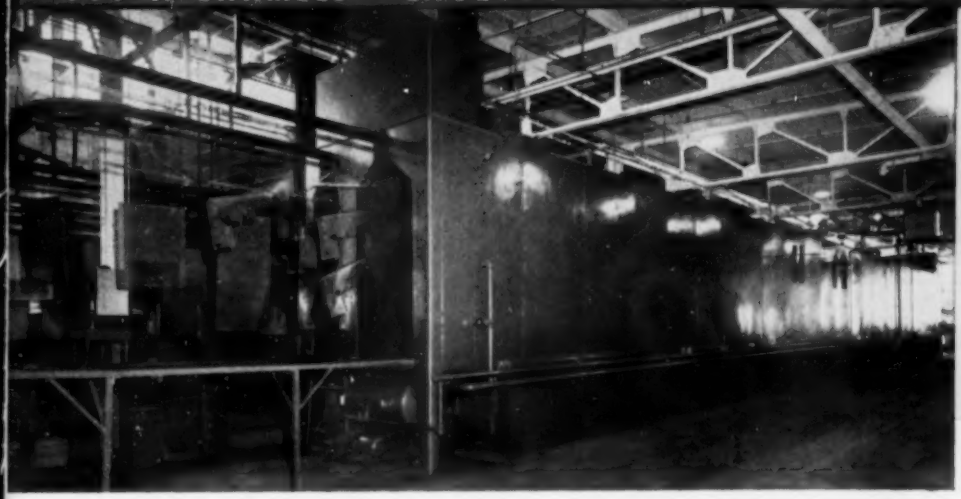
Above at Right you see the Mahon Metal Cleaning and Rust Proofing Machine at American-Standard. Note that two parallel conveyor lines carry parts through a single processing tunnel. Above, the entrance end of the Cleaning and Rust Proofing Machine is shown together with the Overhead, Bottom Entrance, Combination Drying and Finish Baking Oven. Separate Heating Units and Automatic Temperature Controls maintain specific temperatures in both Drying and Finish Baking Sections of the Combined Oven.

M

E

Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH



AMERICAN-STANDARD Heating and Cooling Units Receive Their FINE FINISH in MAHON EQUIPMENT!

Illustrated here are major elements of one of two Complete Finishing Systems recently installed by Mahon in the Buffalo Stamping Plant of American-Standard. In this particular system, which is ultra-modern in every respect, jackets and other metal parts of residential heating and cooling units are carried through the entire system on two parallel conveyor lines. Metal Cleaning and Rust Proofing is accomplished on the two conveyor lines in a single processing tunnel. The two parallel conveyor lines then carry parts through an overhead, bottom entrance, single-pass Dry-Off Oven which is an integral part of the Finish Baking Oven. Parts on each of the conveyor lines then pass through two conventional type Hydro-Filter Spray Booths, staggered right and left hand, where the finish is applied. Finish is baked while the two parallel conveyors make a double-pass circuit in the finish baking section of the overhead oven. This is a typical Mahon engineered Finishing System. If you are contemplating new finishing equipment, you too, will find that Mahon engineers are better qualified to do the all-important planning and engineering which is the key to fine finishes at minimum cost . . . and you will also find Mahon equipment more economical to operate over a longer period of time. See Mahon's Insert in Sweet's Plant Engineering File, or write for Catalog A-653.

THE R. C. MAHON COMPANY • Detroit 34, Michigan • Chicago 4, Illinois

Engineers and Manufacturers of Metal Cleaning, Pickling and Phosphating Equipment, Spray Booths, Flow and Dip Coaters, Drying and Baking Ovens, and Complete Conveyorized Production Finishing Systems.

MAHON

DESPATCH

A FINISHED TRACTOR *every 5 minutes!*

Tractor finishing at the J. I. Case plant, Rock Island, Ill., has been doubled and quality of finish raised to a new high with this modern finishing system designed, built and installed by Despatch. Housed in a new, well lighted building the system is giving Case tractors a rich, durable baked on finish in the familiar Case Flambeau Red. The operation includes washing, painting and finish baking.

1. 600-ft. continuous conveyor enters 3-stage washer where tractor gets a 160° F. phosphate wash, cold water mist bath, and 180° F. hot water rinse.
2. Tractors are spray painted in staggered water wash booths. Paint is heated to 170° F. —eliminates need for thinner and allows closer spraying to cut down overspray.
3. A lasting, weather resistant finish is baked on at 225° F. in this 96-ft. oven heated by steam from the Case central steam plant. Emerging from the oven, tires and other accessories are added.

Let Despatch Modernize Your Finishing Operations

Replace your obsolete finishing system with a modern Despatch system engineered to fit your needs. Increased production, higher quality and lower costs will result.

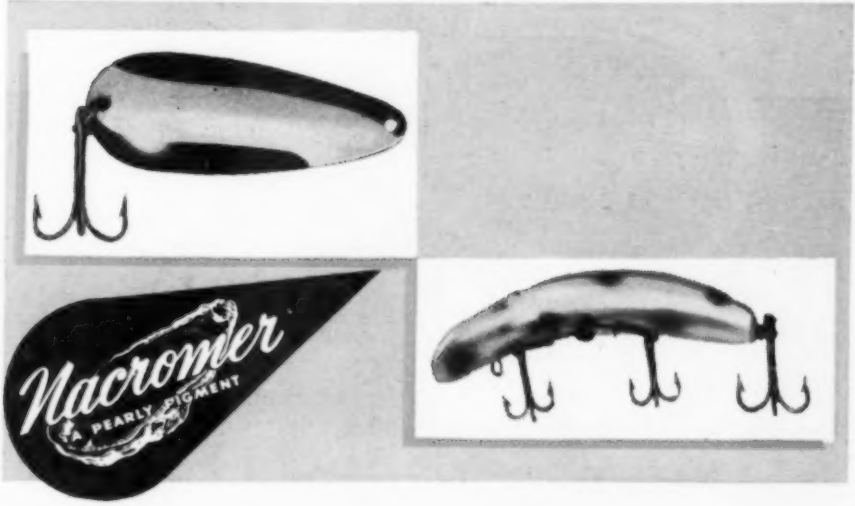
Write, wire or call Dept. E for details.

DESPATCH OVEN COMPANY

Minneapolis Office: 619 S. E. 8th Street

Chicago Office: 4334 N. Broadway

Sales Offices in all Principal Cities



a pearly finish
to catch customers

Manufacturers of fishing lures have long mixed Nacromer with their finishes to obtain a lustre and brilliance almost comparable with natural pearl essence—at a fraction of the cost.

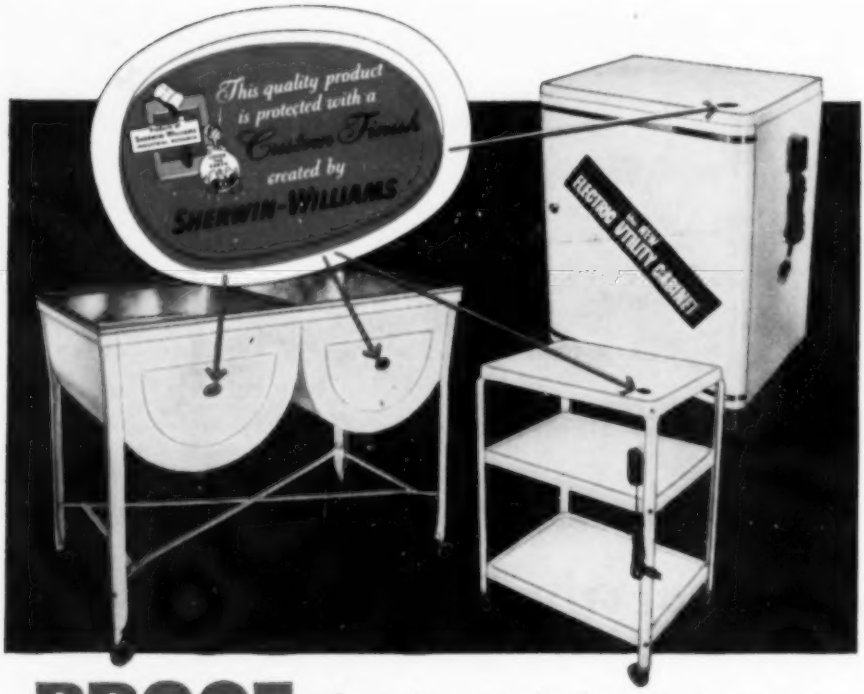
Yes, any product made of wood, metal or plastic can attain a sales-tempting lustre with the addition of Nacromer to the finish. Office equipment? Yes, sir! Kitchen cabinets? You Bet! Toys? Perfect!

Now, test Nacromer on your product. Tell us what you make and we'll send a generous working sample.

the Mearl corporation

"World's Largest Producers of Pearl Essence"

153 Waverly Place New York 14, N. Y.



PROOF *of quality that helps clinch sales!*

The gleaming finishes on products of Metal Products Mfg. Co., Houston, Tex., are designed to give lasting customer satisfaction. Food acids . . . household chemicals . . . hot grease . . . won't mar their beauty. Special ingredients protect against marring, chipping or scratching.

There's good reason. Like many other quality appliances, these products are finished with Sherwin-Williams KEMCLAD®, the appliance finish combining the newest developments in synthetic materials.

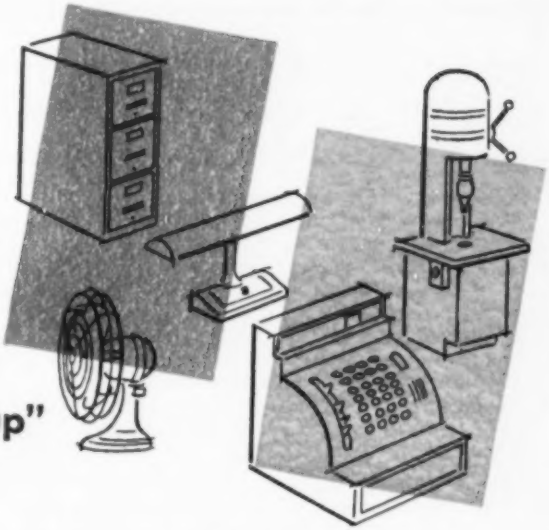
To get the most value from the finish, the manufacturer is helping to make it work for dealers. A Sherwin-Williams identification seal on every finished product contributes the added sales appeal of the best-known name in finishes.

Sherwin-Williams identification aids —tags, seals and decals—are available to users of Sherwin-Williams quality product finishes. They offer an opportunity for you to further capitalize on the advantages of these outstanding materials.

Ask your Sherwin-Williams Industrial Representative for details, or write The Sherwin-Williams Co., Industrial Division, Cleveland 1, Ohio.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

3 WAYS to glamorize "hard-to-dress-up" products



Here's how to get attractive, textured and third dimensional effects . . . conceal surface blemishes, weld marks, minor imperfections. A choice of three ways provides a variety of interesting patterns, infinite shadings of tone—

1. **DIMENSO® ONE-COAT "HAMMERED" METALLIC**—Produces a striking 3-dimensional hammered pattern in a single coat.
2. **DIMENSO® ONE-COAT OPALESCENT**—By modifying the method of application, a variety of rich opalescent effects can be obtained.
3. **KEM® ART METAL**—Durable and distinctive nonmetallic wrinkle finishes. Makes possible highly decorative effects.

Get the facts from your nearby Sherwin-Williams Branch. Consult your classified telephone directory for location. Or write The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

Services of trained industrial finish specialists available in your area through nearest Branch

AUTOMATIC ELECTRIC SPRAY BAKE CONVEYOR COATING MACHINE

Has Built-in Drying Chamber and Electric Strip-heated Oven

- Equipment includes conveyor, water-wash or dry-spray booth, drying compartments, electric strip-heated oven, controls, etc.
- Handles pieces from 1-in. diameter to over 12-in. in diameter.
- Pieces on work holders are automatically sprayed . . . travel through a drying chamber for solvent evaporation, and then into electric strip-heated bake oven.
- Excellent for shell noses, cartridges, weapon parts, clocks, pens, pencils, hardware, etc.
- Produces a high quality finish and exceptional savings on sizes and shapes that are difficult to handle.

PAYS FOR ITSELF IN REGULAR PRODUCTION WITHIN 3 TO 6 MONTHS

Let us make a test run of your own work samples—for time study and cost analysis—no obligation.

THE CAPITOL MACHINE CO.
36 Belmforth Avenue
DANBURY, CONN. Tele. Danbury 3-2758

AIR FILTER
Cabinet Spray Booth showing filter units on top and in front.

NEW FINISHING BULLETIN

EVERY PRODUCTION MAN WILL WANT A COPY

Here is a bulletin that shows you how to cut finishing costs and increase profits. It shows how PELRON services and products make it possible for manufacturers to perform cleaning, phosphating, paint stripping and spray booth operations faster, more economically and with a better end-product as a result. Send for your *free copy* today!

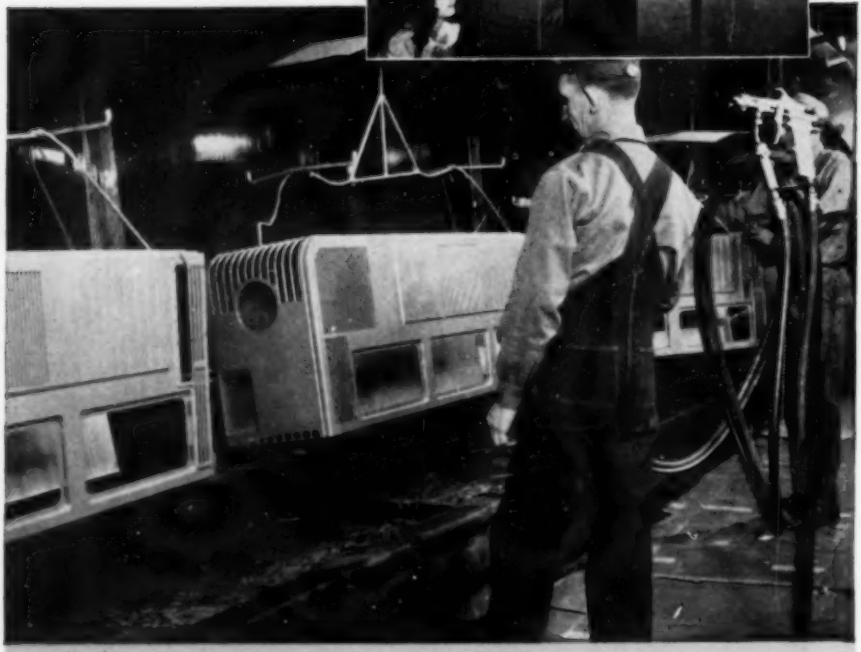
PELRON® CORPORATION

7740 W. 47th Street • Lyons, Illinois

CHICAGO • MILWAUKEE • CLEVELAND • INDIANAPOLIS • ROCK ISLAND • SOUTH BEND • CINCINNATI • ST. LOUIS • BUFFALO • DETROIT • GRAND RAPIDS • NEW YORK

Industrial Oils and Chemicals of Better Production at Lower Cost.

Coleman Heating Unit, finished in Pittsburgh Polychromatic Tan Baked Enamel, harmonizes with almost any interior decorating arrangement.



Coleman Model 492 Trailer heater casings being sprayed with Pittsburgh Polychromatic Tan, immediately following the bonderizing process.

PPG

PITTSBURGH

PAINTS • GLASS • CHEMICALS • BRUSHES

PITTSBURGH PLATE

Leading Manufacturers
Of Heating And Air Conditioning Equipment Rely Upon
Pittsburgh Finishes

Typical of the way in which Pittsburgh research and technical staffs work with an industry to provide special coatings of unusual quality and performance for its products, are the Pittsburgh Finishes developed for many prominent manufacturers of heating and air conditioning equipment.

The Coleman Company, Inc. of Wichita, Kansas, manufactures heaters for trailers. It uses Pittsburgh Polychromatic Tan Baked Enamel on the casings of these heaters.

This is a very attractive finish with eggshell sheen which adds to the appearance of the unit.

Being neutral, the color blends well with almost any interior color scheme. The coating has excellent adhesion and provides unusual mar resistance at the same time that it fulfills the moderate heat resistance which is required.

Interiors of these trailer heating units are finished with high heat-resisting Pittsburgh aluminum finish.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Division, Pittsburgh, Pa.

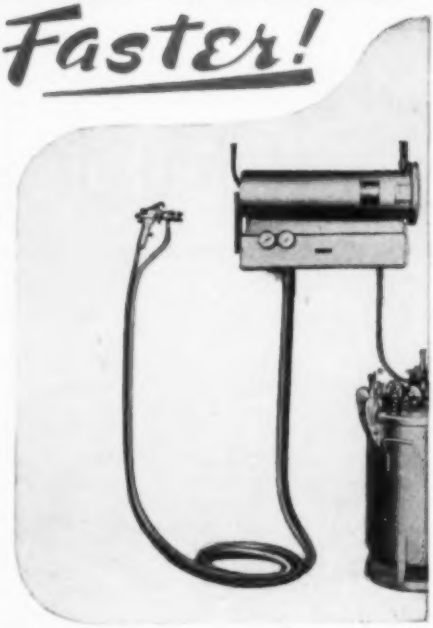
FREE ADVISORY SERVICE

Pittsburgh's broad experience in serving many fields may be helpful in solving your finishing problems. Write, wire or phone the Pittsburgh Paint plant nearest you. We'll be glad to have one of our engineers discuss your requirements with you, without cost or obligation. Such a call may save you time and money.

PAINTS
• PLASTICS • FIBER GLASS
GLASS COMPANY

Hot Spraying Gives BETTER FINISHES *Faster!*

The hot spray process uses heat as a viscosity reducing agent—replacing THINNER with heat. The resulting higher solids content of coating provides better coverage per pass, giving faster production with less labor costs. Hot spraying reduces over-spray wastage, cuts loss from rejects to a minimum by eliminating orange peel, bubbles, sags, runs, blushing and other common spraying troubles—reduces thinner costs as much as 50%, with drying or baking time proportionately lowered. *These proven benefits and economies can be realized to the fullest extent through the use of —*



THERM-O-SPRAY

PUMPLESS—TROUBLE FREE HOT SPRAYING UNIT

Used with any standard spray painting system, heats the paint and atomizing air to correct application temperature immediately before spraying. The finishing material in both heater and hose are maintained at ideal temperatures even during interruptions in spraying without subjecting it to deterioriztion by constant circulation under varying pressures.

CHECK THESE ADVANTAGES OF THERM-O-SPRAY

- Pumpless—trouble-free.
- Quickly cleaned or purged.
- Efficient, low-cost operation.
- Reliable—high safety factor.
- Rugged, compact construction.
- Easily installed in any spray system.
- Simple to operate—no complicated adjustments.
- Handles any hot spraying formulation.
- Sprays many "cold" coatings by.

Technical and Descriptive Information on Request

BOSTON
Industrial Paint Equip. Co.
Div. of Gerard Electric Co.
511 Atlantic Ave.
Boston, Massachusetts

CHICAGO
Wilkinson Equip. & Supply Corp.
6958 South Wentworth Ave.
Chicago 21, Ill.

CINCINNATI
R. J. Knoepfler
2871 Harrison Ave.
Cincinnati 11, Ohio

LOS ANGELES
Spray Equipment Co.
2222 E. Washington Blvd.
Los Angeles 21, Calif.

SPECIAL EQUIPMENT CORPORATION
16 W. Putnam Ave. Greenwich, Conn.
VISIT US AT BOOTH 38, PAINT INDUSTRIES SHOW, ATLANTIC CITY.

here's a phosphatizer that **really cleans!**

DuBOIS ION-KOTE

rinses perfectly!
. . . provides a uniform coating
. . . phosphatizes!

The DuBois Engineered Metal Cleaning program covers every phase of spray washer and immersion tank cleaning. For cleaning problems, here's the DuBois product: ION-KOTE . . . cleans better than any acid cleaner . . . it phosphatizes . . . provides uniform coating . . . gives complete, spotless rinse . . . deposits hard, dust-free, phosphate coating on metal, preventing rusting, increasing paint adherence.

FREE, handy plastic slide rule. Write Dept. A.

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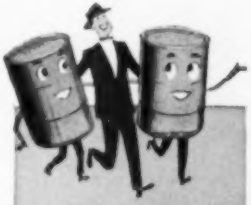
DuBois warehouses and representatives are located coast-to-coast



TRIAL OFFER!
DuBois' exclusive Engineered Metal Cleaning Service includes this unusual trial offer. Get one drum of Ion-Kote on trial. If this product does not meet every one of the claims made for it, the unused portion of the drum can be returned for FULL credit.

finishing Rheem WATER HEATERS

By JAMES F. VOKRAL, Finishing Foreman
Rheem Manufacturing Company, Chicago Works

GOOD finishes just don't happen by accident. It matters little if the product is water heaters or lithographed steel drums. Consistently good finishes are the result of a correctly engineered finishing system, modern equipment, cleanliness, high quality materials, a functional quality control laboratory, and strict adherence to finish specifications.

Many plants start out with all of these things but as time goes on, substitute materials creep in, the laboratory becomes less vital, and finish specifications become less important. We have tried diligently to avoid this condition. The results have proved most satisfactory.

There is nothing unusual about our system, equipment, laboratory or specifications except that all of them are practically the same in importance. They certainly register as importantly with us now as they did six months after they were installed. As I describe the somewhat simple finishing process we use on water heaters, you will realize the importance of being earnest about the proper rules of the game—the specifications.

Our Quality Control Lab. Tests All Materials and . . . .

The function of our quality control laboratory is to test any and all materials used in connection with finishing. All new materials and samples are tested on a pilot basis before either adoption or rejection. All solutions in the power washer are titrated every hour daily. Specifications require that a phosphate coating be maintained on all parts. Once a week we run

through the washer, test panels on which the phosphate coating is checked.

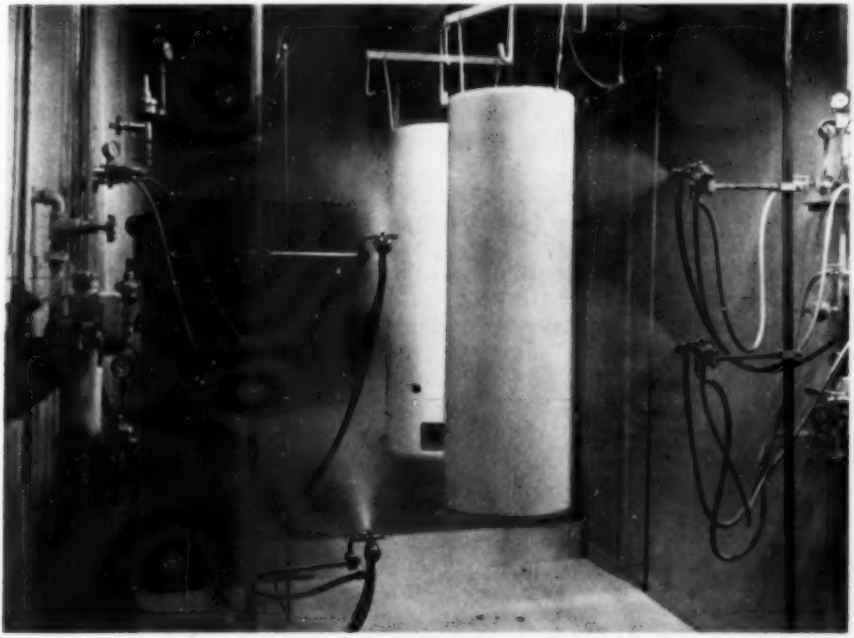
Enamel specifications call for a dry film thickness of 1.2 mils. The dry film thickness is checked each day. Humidity and gloss tests on the finish are run each week. Viscosity of the enamel is checked four times during each shift.

The laboratory checks bake oven temperatures each week by running thermocouples through the oven. Temperatures are compared with the recording thermometer mounted on the outside of the oven. The recording thermometer is checked hourly each day. Paint heaters are also checked every hour.

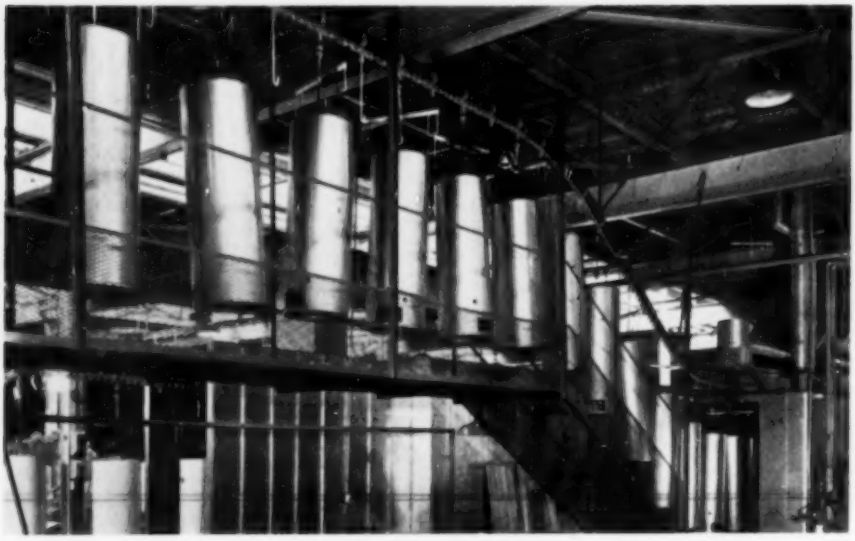
This is the story of a functional laboratory. The records we keep show a daily, weekly and yearly uniformity that is amazing. Yes we do have some rejects, but they are due to some accidental mishap, not to finish failure.

Surface Preparation; Cleaning; Phosphate Coating

As I stated before, our finishing system is neither complicated nor unusual. All parts of the water heater are suspended by hangers, from an overhead monorail conveyor. These hangers are mounted so the water heater jackets and parts will revolve easily inside the power washer, and so that jackets will



Hot synthetic enamel is sprayed on water heater jackets automatically as they rotate while traveling through an electrostatically charged area. Photo, courtesy Enterprise Paint Mfg. Co.



Water heater jackets enter power washer at right; at lower left they are leaving bake oven.

also revolve in the electrostatic spray booth. The conveyor chain is driven through a variable speed drive at 9-ft. per minute.

All parts pass through a power washer. In the first stage they are sprayed with a combination cleaning-phosphating material which is heated to 160° to 180° F. Stage one has a 1400-gallon tank. Strength of the solution is 1½-oz. per gallon.

In the second stage, the parts are sprayed with hot water (160° to 180° F.) in which one ounce per gallon of the same combination cleaning and phosphating material is added. This material is pumped from a 1200-gallon tank.

In the third stage the parts are rinsed in clear water heated to 130° F. In this stage a 1400-gallon tank, with constant overflow, is used.

In the fourth stage the parts are sprayed with a mild chromic-phosphoric acid solution which is maintained at a heat of 130° F. This solution is pumped from a 1200-gallon tank. Strength of solution is .0286-oz. per gallon. The tanks in stages 3 and 4 are drained daily.

After leaving the power washer the parts pass through a direct gas-fired dry-off oven. A powerful air jet at the top of the exit end of this oven blows off any entrapped water from the parts. Any remaining moisture dries quickly because the metal is still hot from its trip through the oven.

Accessories Are Hand Sprayed

About 40-ft. from the exit end of the dry-off oven the small parts, such as water heater top and bottom frames, are removed from the

We'll Formulate to Your Specifications!

If your product or equipment requires an industrial finish that's not readily available as a standard coating, *check with us.* We'll "tailor" the PITT CHEM coating to meet your specifications . . . to provide the eye-appeal, the durability of finish or whatever special properties you're seeking—and we'll furnish you the assistance and advice of experienced coating and finishing personnel.

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give the GO -signal to DETREX

for guaranteed phosphate coating

Detrex has been working with phosphate coatings for rust prevention and better paint adhesion for over twenty years.

Today, Detrex phosphate coatings have gained rapid acceptance by manufacturers of painted products from coast to coast. This acceptance is based on proven advantages . . . exceptional rust protection for metal surfaces, excellent fine-grained crystalline structure that literally locks paint to the metal, and economy and ease of application.

There is another important reason for the growing popularity of Detrex phosphate coatings . . . Detrex One-Stop Service. This exclusive Detrex service places the responsibility for the *complete* process in the hands of one competent company. On present operations, both cleaning and phosphating chemicals are produced by Detrex—on your new applications, Detrex produces the equipment, too. In either case, *the results are guaranteed!*

For a more durable paint finish, for economical, easy-to-control processing, for *guaranteed* performance—give the GO-signal to Detrex.

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At no obligation to you, the Detrex field man in your area will come in and survey your present or proposed operations. There is no cost for the service. The result will prove to you the money-saving advantages of Detrex service. Just fill out and mail the coupon below . . . our field man will call you for the most convenient time to come in.

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Detroit 32, Michigan

Please have the Detrex man in our area make an appointment to survey our operations to point up ways of cutting cleaning costs.

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DEGREASERS • DEGREASING SOLVENTS • WASHERS
ALKALI & EMULSION CLEANERS • DRYCLEANING
EQUIPMENT • PHOSPHATE COATING PROCESSES

conveyor and allowed to accumulate beside a water curtain spray booth. These pieces are hand sprayed and then hung on the finish conveyor to go through the bake oven. Water heater jackets remain on the conveyor which carries them through the electrostatic spray booth. When top and bottom frames go through the electrostatic booth on their way to the bake oven, the spray guns are shut off.

Water heater jackets are blown clean by hand just before they enter the electrostatic spray booth. This blowing (with compressed air) removes any dust that may have settled on the surfaces while the parts were moving along between the dry-off oven and spray booth.

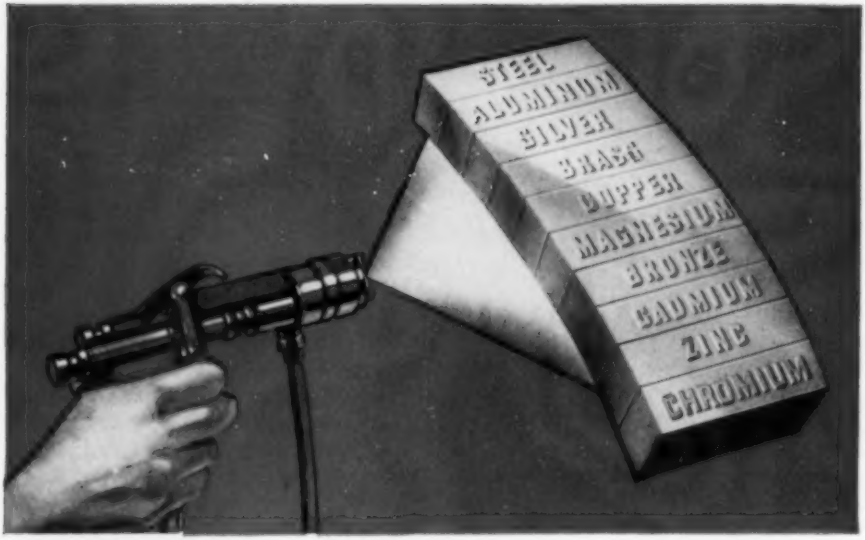
In the spray booth the cylindrical jackets are mechanically revolved as they pass through the 100,000-volt electrostatic field. From four to six fixed spray guns are used to coat the jackets, depending on the length of the jacket being painted. White, alkyd base enamel is sprayed at 18-lbs. atomizing pressure, and 5-lbs. fluid pressure.

The enamel has a viscosity of 13½ seconds at 77° F., as measured in a No. 4 Ford cup, before it passes through a circulating type of paint heater, set at 140° F.

After leaving this spray booth, a 2½-minute flash (air dry) period is allowed before the jackets enter an indirect gas-fired convection oven (with part of the air recirculated) where the finish is baked for nine minutes at 320° F.

Both water heater jackets and top and bottom frames remain on the finish conveyor to cool as they travel to the assembly line. [END]

Materials are tested and finish procedure is checked in our quality control laboratory.



ADHERES to almost any metal INVISIBLE on all of them

DULAC Clear Universal Lacquer #462—a *single* water-white lacquer with remarkable adhesion to practically *all* metals. Finishing shop after finishing shop* reports that this M & W lacquer can be applied with *equal* success to just about any metal—and that it's invisible when applied. AND . . . tests conducted by an unbiased laboratory show that DULAC #462 withstands salt spray and weatherometer tests for longer periods than ordinary lacquers.

DULAC #462 forms a tough, lasting protective film that resists heat, cold, weather, stain, perspiration. It cuts *inventories*, because one lacquer handles so many metals. It cuts *production time*, because it dries out of dust in 5 to 10 minutes . . . hard in an hour. Applied by spray or dip.

*Names on request

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For complete information, write for Technical Data Bulletin #110.

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MANUFACTURERS OF INDUSTRIAL FINISHES

Oils Oven Conveyor

"FROZEN" bearings in the wheels of overhead oven conveyor trolleys caused continuous trouble at the Elizabeth, N. J. plant of the Simmons Company, manufacturer of world-renowned mattresses. The bearing retainers roll into tempering ovens operating at 600° F. and paint-baking ovens at 300° F. Ordinary lubricants tend to decompose or to burn away at these high temperatures. Simmons has found that 'Oildag', a dispersion of colloidal graphite in oil, is a lubricant unaffected by the temperatures required in its process.

The finishing operation is manual. Operators push the "Deep Sleep" box springs attached to trolleys, into the oven for oil burn-off and spring tempering. The spring assemblies are then removed from the oven, dipped in paint and returned to it for 15 minutes at 300° F.

Because the 'Oildag' reduces friction to a minimum, one operator can push as many as 40 empty trolleys at once along the rail to loading station. The lubricant delivery system is composed of pipe parts and flexible neoprene hose running from a reservoir to the spray head. The inside blind bearing retainers are drilled in alignment with the spray head to permit entry of the colloidal graphite spray. The walking beam arrangement used to trip the poppet valves and position a twin nozzle is a simple lever design actuated by the trolley wheels.

Made from a 6-in. pipe section, the

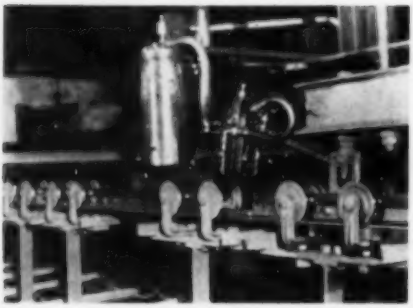
From the seven basic Clair designs, a custom-made machine can be developed to give greatest efficiency in your surface finishing operation. With totally enclosed, abrasion-proof hydraulic circuits and adjustable controls, Clair Machines provide the precision and trouble-free operation necessary for efficient surface finishing on a production basis.

Write for technical data

CLAIR MANUFACTURING CO., INC.

Specialized Machine Equipment For Glazing and Polishing Operations

OLEAN, N. Y.

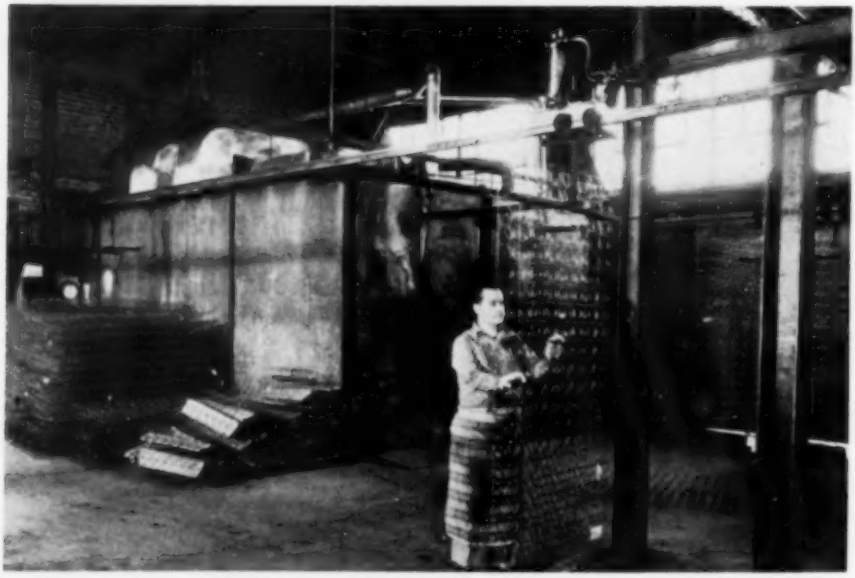


The lubricant reservoir, mounted on the tramrail, is connected by a Neoprene hose to a Schrader No. 92698 normally closed poppet valve which is tripped by each trolley wheel. Plant air pressure on the reservoir sprays suspension of 9% 'Oildag' in Esso Mentor 28 into the wheel bearings.

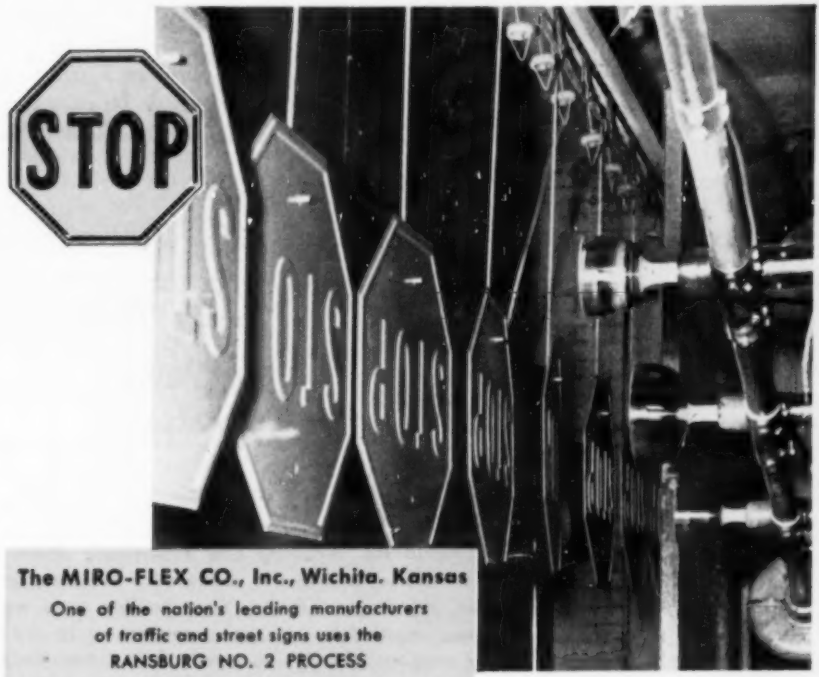
lubricant reservoir is mounted over the tramrail. It contains a suspension of 9% 'Oildag', a product of Acheson Colloids Co., in Esso Mentor 28, which is sprayed into the bearings by plant air pressure on the reservoir.

As many as four springs hang from each trolley. Two overhead conveyor rails extend through the baking oven.

The spray head is positioned so that the colloidal graphite suspension sprays outward on both sides as the trolleys pass. The walking beam mounting permits the spray jet to ride forward with the pulleys. Timing of the poppet valve is adjusted through a tab tapped for a set screw on top of the beam.—*A. C. N.*



"Deep Sleep" box spring hangs from the trolley enroute to oven for tempering. Bearings inside wheel rollers must function properly under heat as high as 600° F. A suspension of 'Oildag' in Esso Mentor 28 effectively lubricates bearings and does not burn-off at such heat.



The MIRO-FLEX CO., Inc., Wichita, Kansas
One of the nation's leading manufacturers of traffic and street signs uses the RANSBURG NO. 2 PROCESS

PRODUCTION IS NEARLY TRIPLED and FINISHING COSTS ARE CUT 47% with
Ransburg NO. 2 PROCESS

Miro-Flex—with hand spray—used to finish 90 signs per hour. Now, with the Ransburg No. 2 Process, production has jumped to 250 units per hour. Overall net saving in finishing cost is 47%—largely due to a 40% increase in paint mileage. And, they are getting a more uniform coating—with NO REJECTS.

This is another on-the-job example of what Ransburg No. 2 Process is doing on production lines all over the country. If you want to know more about the Ransburg No. 2 Process, write for our brochure containing data and detailed information on various installations.

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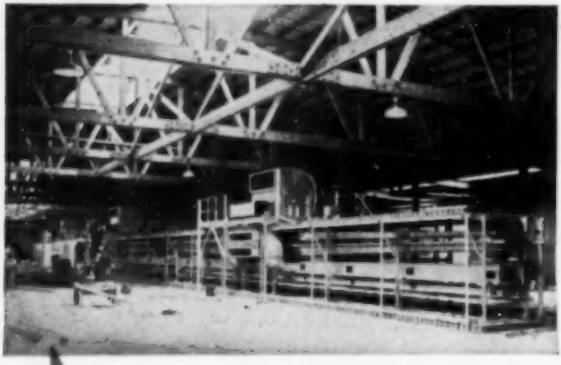
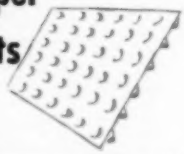
PD Sometimes It Pays To Do Things Backwards



Drying Oven for Paper Products



Another example of the versatility and engineering ability of Peters-Dalton in meeting problems is illustrated in the installation pictured above. This huge, 200-foot, three heating zone water drying oven was required by a paper manufacturer to dry his molded paper products. Usually, an oven's shell is first erected, then the interior working parts are assembled within it. Due to space limitations, however, the usual method was impossible, so PD engineers worked *backwards* on the job, constructing the oven's interior first, then erecting the shell over the finished oven—meeting the manufacturer's needs for an efficient drying system without sacrificing valuable plant space.

Baking and drying equipment should be designed for the specific product and process. Whatever your baking and drying problems are, PD engineering experience and production "know-how" stand ready to meet and solve them. We will be glad to tell you more if you write, wire or phone.

Hydro-Whirl Paint Spray Booths • *Industrial Washing Equipment*
Drying and Baking Ovens • *Hydro-Whirl Dust Collecting Systems*

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Solvents Are Important

APPEARANCE, eye appeal in the product, represents a large percentage in its saleability. Therefore, the finish on any product is highly important. And, of the utmost importance in finishing, is the solvent used in the paint.

Solvent has the power to smooth out the finish, increase gloss and reduce rejects, or to produce pin holes, separation of solids, orange peel and other defects in the finish. A large percentage of orange peel is caused by using the wrong solvents.

The following points should be borne in mind when selecting and using solvents:

Solvents disperse or disolve resins or solids, and they must be compatible with the original solvent used in the paint.

Solvents transfer properties to carry solids to the surface and flow out these properties in the film.

The power of the solvent is materially reduced in low temperatures. Even the correct solvent will cause serious trouble if it is mixed with the paint at low temperatures. The solvent should be about the same temperature as the paint when added. If paint and solvent are stored out of doors or in an unheated room during cold weather, both should be brought into a warm room for 24 hours before using.

Cheap solvents will not produce a good finish. The best yardstick to use is the applied unit cost of an acceptable paint to the finished product rather than the price per gallon.—*W. B.*

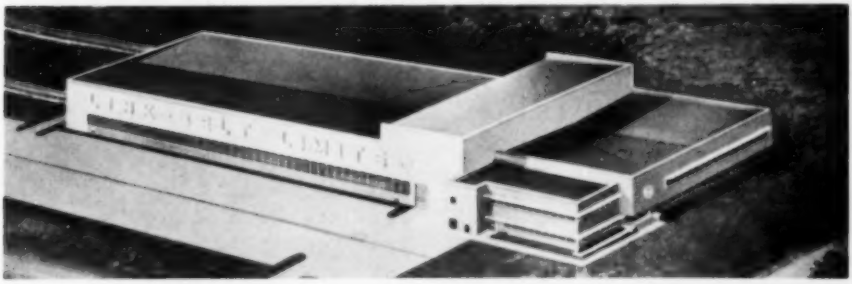
McAleer Products Back to Original Owner

The McAleer line of products, a well-known line dating back to 1923, is now back in the hands of its original owner, C. H. McAleer, president of Detroit Chemical Specialties, Inc.

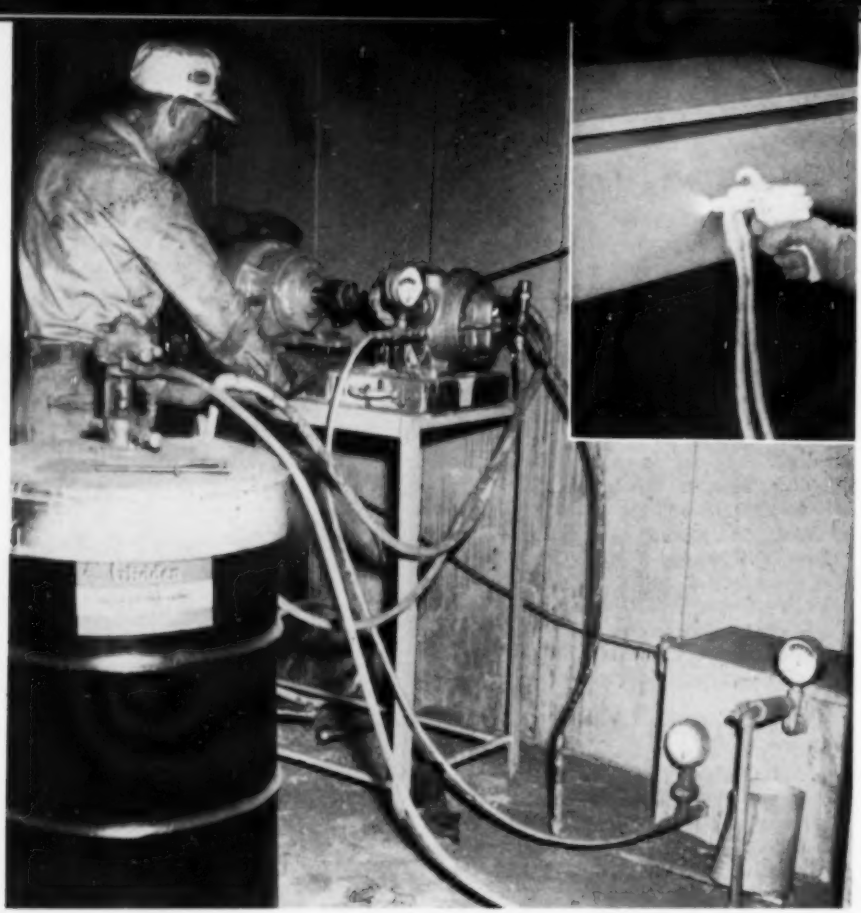
The complete line of McAleer products, including liquid polishes, waxes, polishing and buffing compounds for the plating industry, rubbing compounds, and other chemical specialties, will be sold nationally, direct to the trade and through distributors.

The McAleer Manufacturing Co. was organized 30 years ago to supply car manufacturers with original lacquer rubbing compounds and polishing and buffing compounds, eventually used by the entire industry, Mr. McAleer sold his interests in 1940.

He returned to the field in 1946, when he founded Detroit Chemical Specialties, Inc., with the "Detroit" line of polishing and buffing compounds and allied products. The company will continue with this line, along with the McAleer line. It is located at 101 S. Waterman, Detroit.



Designed and built by The Austin Co., this new plant is located at Scarboro, Ontario, Canada. Outside walls of factory are corrugated asbestos siding; of office, brick over concrete.



Left to right: A drum of yellow hot spray enamel, the motor driven pump, and paint heater at lower right. Insert at upper right shows airless spray gun in operation.

Airless Spray Painting

OF FARM EQUIPMENT

AMERICAN farm equipment is given a coat of durable and decorative enamel by the manufacturer. This coat of paint serves no less than three important functions. First, it provides a protective coating which prevents early rusting of steel surfaces during outside service and outside storage; and second it gives the product a

new and finished appearance, with every part identified as belonging to the complete ensemble. Third, and by no means least, a bright coat of good paint — smooth, lustrous and colorful—gives the product desirable attractiveness and eye-appeal which are important factors in making prospective users want to buy it, and making them proud owners once they do have it. And the particular shade of color used, or the employment of two specific colors in certain combinations, often serves to identify the maker of the equipment.

Also, any bright colors, such as yellow and red, offer a pleasing contrast to the color of fields, pastures, trees and roads in and near farms and ranches. Every farmer feels a real sense of pride in the ownership of equipment that is painted in bright colors.

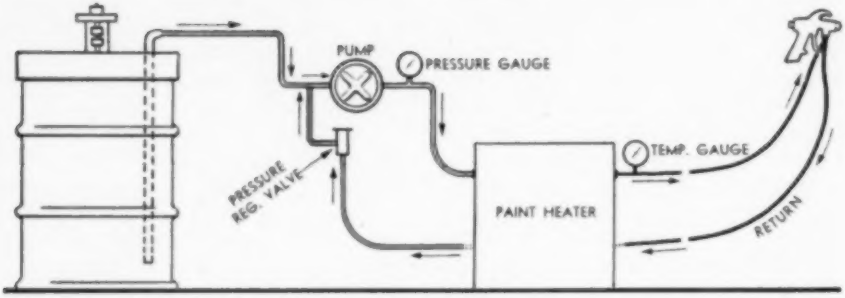
At the farm equipment plant of Kelly Ryan in Blair, Nebraska, the predominating color used is yellow; bright red is used on certain small parts and for the stenciling of the company's name on all of its products. Some of the farm equipment manufactured here includes Trailaway elevators, trailers for spreading fertilizer, trailers with stock feeding attachments, disc harrows; and mowing, raking and baling machines. These products are so large in size and so varied in shape that the company has set apart one large room to serve as the spray painting department. It has intake and exhaust fans; one large exhaust fan is located in the roof.

Part of an elevator painted and stenciled.

Why the Firm Put in Airless Spray Equipment

Formerly the spray painting operations here resulted in a large amount of paint overspray escaping through the roof exhaust fan and flying about the neighborhood. This condition proved to be objectionable, particularly to a nearby dealer in grave stones. Accordingly, when airless spray painting was announced to the trade less than a year ago, the management of Kelly Ryan became interested. After seeing the equipment demonstrated, the company ordered and had installed one unit large enough to easily serve three spray guns. A picture of the equipment, as it is set up outside the spray room, appears at the beginning of this article.

Included in this airless spray painting equipment are the following: A rotary pump directly connected to a ¾-hp. explosion-proof gearhead motor, a U.L. approved electrical paint heater, and specially designed spray guns, along with



Flow diagram of airless spray painting system. Information, courtesy of Bede Products, Inc.

the necessary pipe lines, hose and gauges. Paint is pumped directly from a 55-gallon shipping drum into which power-driven propeller-type stirring or mixing blades operate.

Two Forces Make the Paint Spray

In this type of airless spray painting, two forces are utilized to produce the pressure needed for properly atomizing and spraying the paint. One is the mechanical force produced by a positive displacement rotary pump. When the spray gun trigger is pulled the liquid paint under pressure is released through a restrictive nozzle, like water from the nozzle of a garden hose.

The second force employed is vapor pressure produced by heat. The paint is heated as it flows through the paint heater and this heat—up to 180° F. or more—raises the temperature of the paint and paint solvents to the extent that some of the solvents reach their boiling point. However, because the liquid circuit is under high pressure (300 to 600-p. s. i.) these solvents do not actually boil. But when they are released through the spray gun nozzle, these pressure-forced, hot paint solvents expand with great force (like escaping steam) and in so doing they produce an additional break-up of the paint particles with which they are intimately mixed.

Recirculation of Paint; Absence of Overspray

Paint continues to recirculate while the painting unit is in operation, therefore the paint is uniformly hot throughout the paint lines and up to each spray gun nozzle. The specially developed rotary pump's output is rated at one-gallon per minute. Heating capacity of the paint heater is 20 to 24 gallons per hour. Both the paint hose and the spray guns are specially designed to withstand high pressure and heated paint solvents. Spray nozzles are available in varying degrees of fan width, from 15° to 110°.

Milford Campbell, paint foreman, likes this airless spray painting setup. Asked why, he put it briefly this way: "Our men spray a piece of equipment in half the time and

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for Metal Cleaning and Finishing

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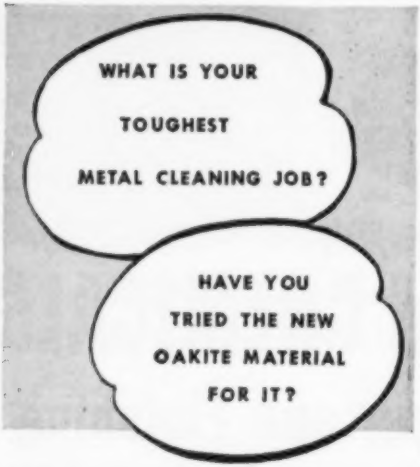

In recent months, Oakite chemists have developed 16 new materials for performing such metal cleaning and processing operations as:

Heavy-duty cleaning in tanks
Washing in spray machines
Electrocleaning zinc-base die castings
One-operation cleaning, pickling and conditioning for painting
Applying zinc phosphate coatings to steel in preparation for painting
Etch-cleaning aluminum
Stripping paint
Drawing and forming

FREE Tell us which jobs interest you when you write for our revised 44-page booklet "*Some good things to know about Metal Cleaning*". Address Oakite Products, Inc., 32F Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

they don't need to wear respirators, as there is practically no overspray." No overspray escapes through the exhaust fan, therefore the neighbor who formerly objected to Kelly Ryan's spray painting operations is now happy. In fact, the absence of overspray is rated, by everyone concerned, as a particularly desirable feature.

Spraying hot enamel helps to reduce wastage of paint materials and it makes possible the more rapid application of a heavy one-coat paint job that has excellent adhesion, smooth flow-out, perfect coverage, fast drying, and great durability.

The paint used on Kelly Ryan farm equipment dries to touch within an hour. At the present time, only yellow paint is being sprayed with the airless unit.

In another building small parts that are painted red are dip-coated, hung to an overhead conveyor and moved through an infrared tunnel to dry the paint quickly so the parts can be handled within a few minutes after being painted.

United Lacquer Mfg. Corp. Expands Linden, N. J., Plant

The United Lacquer Mfg. Corp. announces that Mr. Ralph Krivit is back at his desk in Linden, N. J., after four years at the plant in Everett, Mass.

After extensive study, it was concluded that expansion of the laboratory and additional processing equipment in Linden would enable United to serve New England more efficiently by centralizing the firm's operations.

It is now six months since the expansion program has been completed, and the New England area is currently being served from Linden. Preparations are now being made for continued expansion in the research department to further improve service on customers' requirements for specialized finishes.

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Helps Hold Mature Workers

EVERY FINISHING department must depend on its more mature workers for the experience and stability upon which efficient operation is based. This means that anything contributing to the contentment and peace of mind among the older men will be reflected in better production records.

An empoyee between forty and fifty years of age may be at his peak performance in the finishing department, particularly if his duties have been well fitted to his ability. Even so, he will be doing some planning for his retirement and in such plans his "Social Security" will play an important part.

Management—and especially at the foreman level—may be approached by such workers with questions about what may be expected from the Social Security program. Some few foremen may have the information well in hand, yet there is always the possibility of not having the very latest facts, or not having interpreted correctly the newspaper and magazine accounts on this subject.

To avoid any possible problems, it is preferable to refer the worker to his local Social Security office where he can be very sure of the facts. If necessary, he might very well be allowed time off to check on doubtful points. It isn't likely that any work he accomplishes in a single day will add as much to the finishing department's production as will the peace of mind coming from a complete knowledge of where he stands in relation to his own Social Security program.—*George M. Dodson.*

BY JOSEPH GROBAREK, Finishing Foreman, Rembrandt Lamp Corp.

Shading the base with artist's air brush. Harps and sockets are finished to match the lamp.

THE FINISHING PROCESS ON

Rembrandt Lamps

TO FINISH 600 different sizes and types of lamps — both floor and table models, using 60 different colors—this could hardly fall into the category of mass production. It is custom finishing.

These lamps are originated by our own designers. A full scale color sketch is drawn. After numerous conferences, some major or minor changes in design and color treatment are made. It is only after final approval of a design that work orders are issued. Then the approved color sketch goes to the finishing room so that colors can be mixed and blended to match those that have been okayed by management.

Most of the materials used are processed in our plant. [*To page 42*]

Only ceramic parts, onyx bases and electrical parts, such as sockets, switches and wire are purchased from others.

Many different materials and combinations of materials are used in the manufacture of these lamps. Some bases are of spun or stamped metal, both brass and steel. Other bases are made of white metal castings. These are copper plated before they enter the finishing room. We have found that much better adhesion is obtained when pigmented lacquers are applied over a copper-plated base rather than directly onto the white metal alloy.

Degreasing—and Protection Against Finger Printing

All metal lamp parts are polished before they go through a trichlorethylene vapor degreaser. Then they are wrapped in tissue paper and stored in a room where temperature is maintained at 95° F. until the parts go to the finishing room. This precaution eliminates the chance of any moisture getting on the parts due to condensation.

Those parts that are gold finished or silver plated, or finished in antique bronze, are dipped in a clear water white lacquer to protect them against finger printing and atmospheric conditions before they reach the finishing room. After assembly, all silver plated lamps are given two spray coats of clear water white lacquer to protect them against tarnishing.

Lamps to be finished in gold lacquer, antique bronze or French bronze are assembled before they are spray finished so that the entire lamp will have a uniform color.

Brass tubes which become part of a floor lamp are hand sprayed with gold lacquer.

Wood Bases Polished and Sprayed With Hot Lacquer

Some lamp bases are made of solid wood block; others are a combination of wood and metal. Birch lumber from 1-in. to 6-in. thick is dried in our kilns under controlled conditions, and then cut to the required sizes. To obtain the desired final effect, the wood surface is given repeated sandings until it is absolutely smooth. When these wood blocks arrive in the finishing room they are again sanded with No. 3/0 sandpaper until the surface is not only smooth, but has a virtual polish.

After a thorough cleaning to remove all dust and grit, the wood blocks are immediately given a

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SOL-KLEAN prepares steel and aluminum for painting, removing rust, oxide and oil. It etches the metal and gives a thin phosphate coating. One volume of Sol-Klean, diluted with 3 volumes of water, usually brushed on the metal at room temperature. It penetrates oil and dissolves rust. Sol-Klean is removed together with the dissolved oil and rust by wiping with rags or flushing with water. Metal may also be cleaned and treated by immersion in hot Sol-Klean and rinsing in water. Sol-Klean is non-inflammable and evolves no toxic or corrosive fumes.

SURPHOS cleans and produces a phosphate coating on sheet steel, machined and cast iron. It anchors the paint finish and increases its humidity and salt spray resistance. Use hot (one ounce per gallon solution) in Power Wetting Machine or dip tank. Acid proof equipment not needed.

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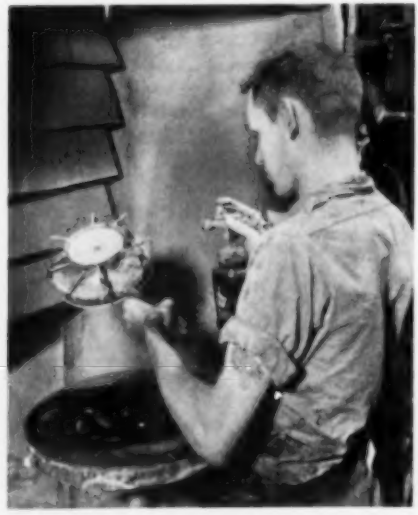
spray coat of hot pigmented lacquer. This lacquer passes through a circulating type paint heater set at 140° F. The material hose is only 4-ft. in length from the paint heater to the spray gun, therefore the lacquer doesn't lose much of its heat before it reaches the gun.

Wood bases dry overnight before they are wet sanded with No. 320 wet or dry sandpaper. Naphtha is used as a sanding lubricant. The blocks are then thoroughly cleaned before they receive a spray coat of colored lacquer which is allowed to air dry for four hours. A second coat of colored lacquer is applied, and this air dries overnight.

As you know, birch is a very close grained, dense wood. With thorough sanding and even polishing with fine sandpaper before any finish is applied, plus the extremely heavy coat of pigmented lacquer, made possible through heat, and then wet sanding, a finish is produced that equals the smoothest metal finish in appearance. This finish far surpasses sheet metal in weight and texture.



A lamp base is spray finished through a protective, precision metal mask. Some parts require two of these masks.

Color stripes are put on spun brass lamp bases with striping brush as the base is revolved on a ball-bearing turntable.

Striping and Decorating Various Parts of Lamps

On round metal lamp bases, stripes are applied with a striping brush while the base is manually revolved on a ball-bearing turntable. These stripes could be put on by spraying pigmented lacquer through precision metal masks; however, due to the many different base diameters and numerous stripe widths, we have found it easier and more economical to use the striping brush. [*Continued on page 46*]

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Most of the decorative finishes on leaves, flower petals, scrolls and conventional designs are applied by spraying the colors through precision metal masks. Two and sometimes three of these masks are used in sequence for a single design. For shading and color blending we use an artist's air brush. It might well be said that Rembrandt lamps are hand decorated and hand finished.

Refrigerator Finishes Are Better, Survey Shows

A FIELD survey of refrigerator finishes, completed by the Du Pont industrial finishes division in New Orleans and Miami, reveals that resistance to greasy materials, such as butter, has improved threefold over the past ten years. Softening and eventual failure of the finish where greasy substances were transferred from the housewife's hands to the enamel, especially around door handles, long was a primary problem.

Observations involving several hundred refrigerators in homes show that this is no longer serious. Also, chemists making the survey stated that "Dulux" synthetic resin enamels remain virtually blister-free, even under the extremely humid conditions in the cities selected. Refrigerator finishes in northern climates have a much longer life, it was said.

The survey is the most recent in a continuing series dating back 12 years to correlate laboratory testing data with field experience. For example, if a coated panel

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will stand up well under a Du Pont laboratory grease immersion test for three weeks, it has been found this can be translated into service throughout the life of a refrigerator under normal conditions.

This program of field surveys is credited by company finishes authorities with a major share in the steady upgrading of so-called high baked white organic finishes since their introduction for refrigerators in 1937. —*Product Information Service.*

Dr. Salsberg Becomes Director of DuPont's Chemical Dept.

Dr. Paul L. Salzberg has been promoted to director of the Chemical Department of the Du Pont Co., succeeding Dr. Cole Coolidge who died recently. He has been associated with Du Pont research since 1928 and has been assistant director of the Chemical Department for two years.

Dr. Salzberg has been personally active in research work as well as in the direction of scientific programs. Sixty-three patents in the fields of synthetic organic chemistry, polymers, and insecticides have been issued in his name. He joined Du Pont in 1928 as a chemist at the Experimental Station here in Wilmington, just after receiving the degree of doctor of philosophy in chemistry from the University of Illinois. He had spent his 1927 summer vacation working at the Station. He was advanced to group leader in 1929 and to research supervisor in 1936.

Tumbling Research Lab.

Lupo Research Laboratories is now operating as a Division of the Lupoline Automatic Polishing Equipment Corp. for the purpose of developing new tumbling processes, compounds, and modern design tumbling equipment.

Lupoline Automatic Polishing Equipment Corp. has been formed to take over all sales, purchasing and manufacturing facilities of Lupo Research Laboratories. Plant and warehouse space has been enlarged to meet the great demand of Lupoline products. The new organization has already expanded the mixing department and facilities have been increased so that manufacturing and assembly output is operating on a streamlined, high-scale production.

The company manufactures tumbling equipment for finishing wood, metal, and plastic articles. The firm's address is 111 Columbus Ave., Tuckahoe, N. Y.

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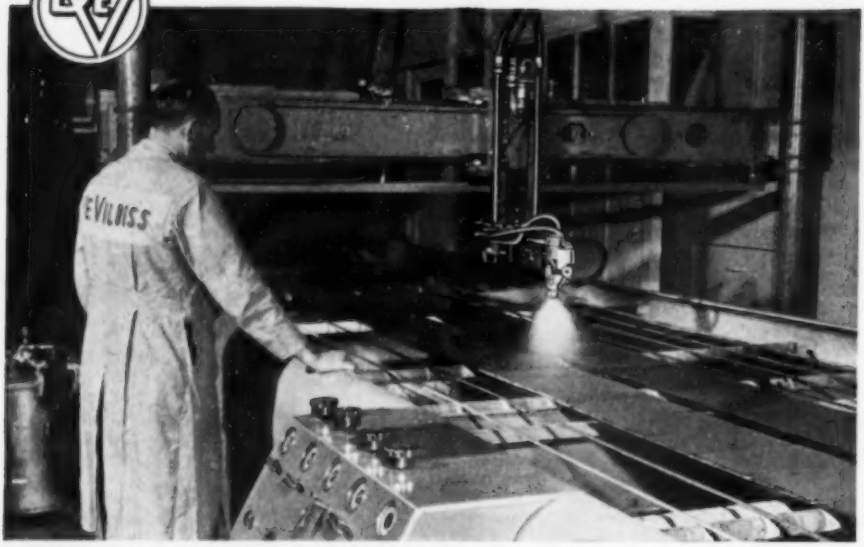

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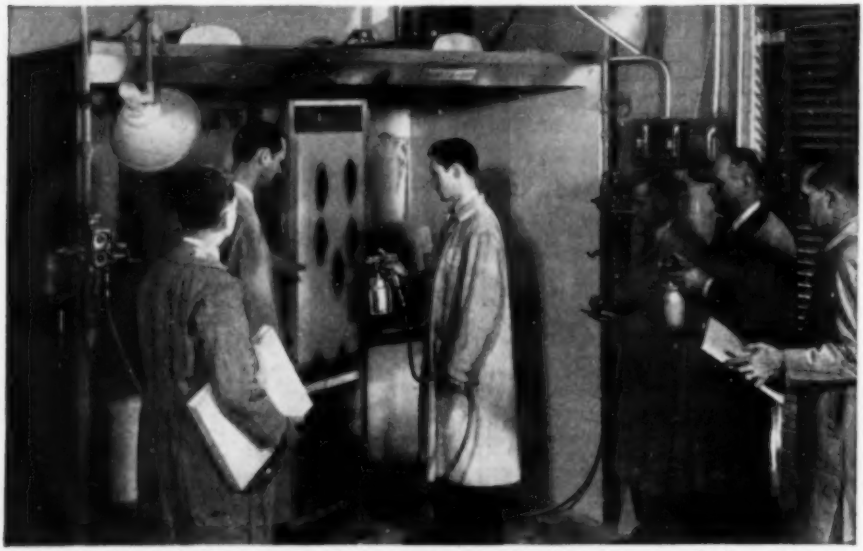

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Filler

• The Theory and Technique of Application

BY R. I. QUIGLEY
Vice-President of Lilly Co.

GRANTING that some fillers are better than others, at least for the particular purpose for which they are assigned, it is necessary for the user of filler, in order to get material best suited for his requirements, to give the supplier full information regarding the type of finish, the kind of wood, the finishing schedule, and plant conditions that might affect the finish. If the manufacturer of filler has been given complete information of the requirements to be met and the conditions under which the filler is to be used, then it is his task to produce a filler satisfactory to the user.

What filler is, what it is used for, what it accomplishes, what finishing troubles may show up when it is not used correctly, how to prepare filler and the wood to receive it, how to apply prepared filler; padding, wiping and drying of filler; the use of sealer coats over it, and other facts relating to this essential phase of modern wood finishing.

Fillers Are Made to Meet Many Requirements

Should the filler manufacturer find that the requirements to be met are out of line from standard practices, or if conditions in the customer's factory are adverse to good results, he should so advise the user. The next step would be to make a survey of requirements and conditions to determine whether or not changes in the finish or finishing schedule, or in the plant set up, would be practical. Many times minor and inexpensive

This is copy of a paper prepared by the author and presented at the 7th Annual National Meeting of the Forest Products Research Society at Memphis, Tenn.

changes can be made which would be far more effective in producing good results than for the filler manufacturer to attempt to develop a freak product to meet extraordinary conditions.

I do not mean to infer that the manufacturer of filler should not attempt to fit his product into the user's scheme of things where it is feasible to do so. Nor, do I mean that filler manufacturers should not attempt to produce new and better products and to keep abreast of the ever changing pattern of furniture manufacturing and finishing. However, any radical changes in filler formulation and performance should be the result of thorough research and investigation and testing which would require considerable time.

Fills Open Pores in Wood and Contributes to Color Effect

Wood filler has a dual purpose, aside from some possible specialty uses. One function is to provide a smooth surface on which to build a film of protective coating. The other is to contribute to the desired color effect of the finished wood surface.

In using filler to provide a smooth surface, we do so for economy's sake. Surely it is much less costly to fill the pores and voids in a wood surface in one operation than by using successive coats of film-forming materials. In fact, it is doubtful that a smooth surface over unfilled wood could be arrived at by multiple coats of finishing material, unless each coat were dried and sanded before the application of the following one.

Filler Is a Factor in Color Scheme of Finish

In the color scheme of a finish, filler may have a widely varying role. In planning a finish for a line of cabinets or suite of furniture, the color of the filler to be used should be considered at the start, since a filler of the wrong color can ruin an otherwise beautiful finish.

When finishing certain types of wood that have a pronounced figure or grain pattern, such as hackberry or ash, it is often desirable to subdue the color of the filler to make it blend into the background color as inconspicuously as possible. For other woods, the attempt is made to emphasize or bring out the figure in the wood by using a filler with some contrast to the base color of the finish.

As a rule, in finishing furniture of traditional design, the filler is made enough stronger or darker in color than the background that it will not have a gray or muddy appearance. On other types of furniture, the filler may contrast with the background color by being lighter in color or of a different color altogether. Examples of this are seen in limed oak finishes and many of the toned finishes being used on mahogany, walnut, oak and other woods that have large pores. These finishes have been extremely popular during the past two or three years.

When Fillers Did the Staining Job Too

In years gone by, fillers were made not only to color the pores of the wood but also to stain the surface of the wood. This practice still

holds to some extent, especially on oak office and school furniture. However, the usual practice, in finishing household furniture, is to have the filler color the pores while the surface of the wood is colored by stains or glazes—and often by color in some of the undercoatings such as the washcoat and sealer. This latter practice helps to give clarity to the finish, especially in dark finishes, and it provides better uniformity of color.

Troubles That Result From Poor Filling and . . . .

Too often, we have seen bad results from using too many coats or excessively heavy coats of sealer, lacquer or other top-coat materials. This is not done to replace the filling operation, but usually it represents an attempt to obtain a smooth surface over a poorly prepared and poorly filled wood surface.

The result of such practice might be print marks when the furniture is packed, due to the fact that the heavy coats did not dry properly on the finishing schedule. It can also result in greater rubbing costs in cutting down extra material; poorer rubbing qualities of a film not properly dried; the danger of a film checking or cracking if it is too thick; and also the added cost of the excessive amount of material used and the time expended.

Not all furniture or woodwork requires a finish of great depth or fullness. Some of the highest priced furniture is only partly filled or not filled at all; even on woods with large pores such as mahogany, walnut and oak. This type of finish usually has little depth and lies close to the wood. However, a good body or depth of finish is required on most of the home furniture being made today.

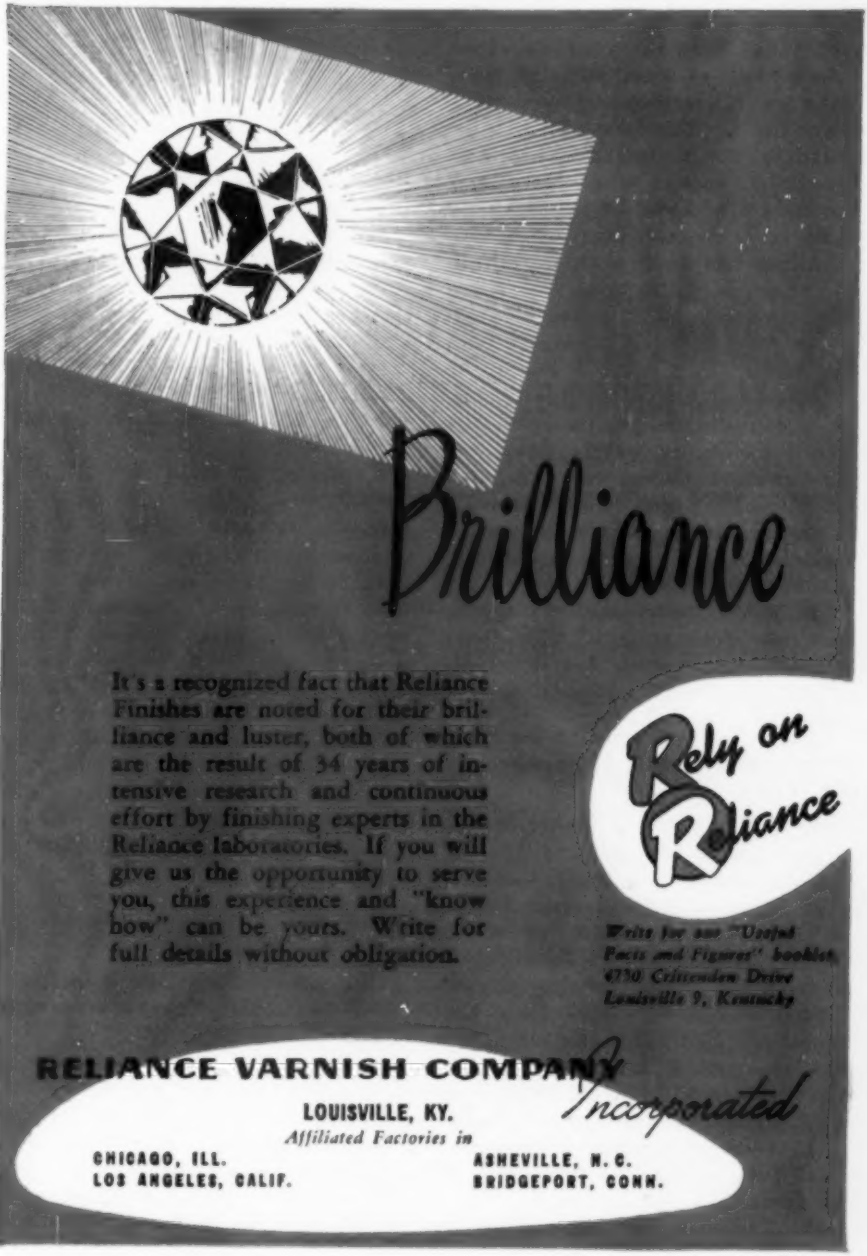
For a Smooth "Mirror" Finish Open Pores Must be Filled

For the past few years there has been a demand for a furniture finish of great depth and high polish, particularly on suites of modern design. This finish requires a smooth, mirror-like surface. Any open pores or partially filled pores detract greatly from its appearance. Many times such an appearance of "graininess", as it is often called, is laid to shrinkage of the coating materials, whereas the real cause is poor filling. One after-result of poor filling is that the effect of the open pores cannot be eliminated in the rubbing process without causing the finish to be rubbed through in places.

It becomes evident then that poor filling can increase costs elsewhere in a finishing operation, besides detracting from the appearance and salability of the finished product. The difference in cost of a good filling job and a poor one may not be great. It might mean only the placing of an inspector in the filler room, or perhaps an extra man or two in applying or padding filler.

Pinholes; Bubbles; Blisters; Gray Appearance

Another defect due to poor filling may be pinholes in the final finish. Also, one of the most aggravating conditions in finishing wood is the formation of bubbles or blisters in the sealer or top coats. At times there are other causes for bubbles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or blisters in the top coat materials, but it has been the writer's experience that at least 90% of bubbling and blistering conditions have been due to improper filling. Any bubbling and blistering in coatings usually disappear when the filling methods are corrected.

So far, this discussion on results in filling has dealt with the filling of the pores of the wood. There are also other phases to be considered. Filler not properly cleaned from the surface can cause a muddy or gray appearance in the final finish, or it can obscure the figure of the wood. Filler improperly dried before coating may leave a grayish pore color which would detract from the clarity of the finish and likewise cause a muddy appearance. Aside from the harm to the beauty of finish caused by incorrect drying and poor cleaning up of filler, these faults in application may adversely affect the adhesion or toughness of the total finish.

Preparation and Application Of Filler Material

In attempting to prescribe the best methods for applying filler, it will be necessary to repeat good advice which has been given before by others, and much of which seems commonplace. However, there are certain phases of the process which should be particularly emphasized. Assuming that the user has the proper filler for the job, the various steps to be considered in applying the filler are as follows:

1) The preparation of the surface over which the filler will be applied.
2) Thinning and application.
3) Padding in filler.
4) Clean-up after padding.
5) Drying of filler.

Preparing Wood Surface to Receive Filler

The usual surfaces over which a filler is applied are: bare wood (sized or unsized), a washcoat on bare wood, a stain or toner, or a stain or toner which has been washcoated. The main requirements are that these surfaces—whether they be the wood itself or some finishing material such as stain, toner or washcoat—be properly dried and be as smooth as possible.

Excessive moisture in the wood, or solvents retained in finishing materials beneath the filler—either of these opens the door for ultimate trouble in the final finish. This trouble may show up as lack of adhesion of the coatings, poor filling, a cloudy gray finish, blisters, or all of these defects. *The surface should be smooth so the filler will cling only in the pores of the wood, leaving the wood surface clean.* It is impossible to clean off filler from a rough surface without removing some filler which should be left in the pores.

Glue Sizing Soft Woods Before Filling

When finishing woods of soft texture, particularly those species that do not sand readily to a firm, smooth surface, it is often advisable to size the surface before beginning the finishing operation. This is especially true when filler is to be applied to the bare wood. The sizing material—usually very thin animal or hide glue, although

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other materials such as thinned shellac or so-called bleaching lacquer may be used—is designed to stiffen the fuzzy fibers on the surface of the wood so that they will be cut off clean when sanded. Also, by providing an even firm surface, sizing causes the wood to "take" color from the stain or filler more uniformly than if the wood were not sized.

Glue is the most common substance used for sizing. It is applied by various methods such as spraying, sponging, roller coating or brushing. It is most important that: 1) the right amount of glue is applied; 2) that it is applied evenly; and 3) that the size-treated wood surface is thoroughly dry before being sanded.

The customary practice is to make a size by thinning one part of cabinet maker's hot liquid glue with from eight to eleven parts of water; the cabinet maker's glue is usually two parts of water to one part of flake or ground glue.

It has been the writer's experience that ten or eleven parts of water is better than eight parts of water to one part of liquid glue. This ratio provides sufficient water to wet and raise the fibers of the wood and it dries sufficiently fast to stiffen the fibers while they are still standing. Heavier applications of size tend to retard drying, fill the sandpaper, and partially fill the pores of the wood, which usually is not desirable. A satisfactory method is to apply warm glue size (for better penetration and drying) evenly over the surface of the wood with a sponge.

Washcoats—Thinned Shellac, Lacquer Sealer or Lacquer

Washcoats are usually used over stains or toners before filling, although in many instances the filler is applied directly over stain or toner. A washcoat may be said to be a thin coating of heavier substance, or higher solid content, than a size coating. It is generally made from shellac thinned with alcohol, or sealer or lacquer thinned with lacquer reducer, and may vary from 4% to 8% in solid content.

Two main purposes of washcoats are to prevent filler, which is applied over it, from staining or darkening the surface or flake of the wood; and, like a size coat, to stiffen and harden the raised fibers of the wood so they can be easily sanded to a smooth surface.

The use of a washcoat was quite essential in the past when water stains were commonly used, due to the fact that water stains raised the grain and roughened the surface of the wood. Unfortunately, some so-called non-grain-raising stains often belie their name in humid weather, due to their hygroscopic characteristic; hence at times they also raise the grain of the wood.

Personal Preferences Concerning Different Washcoats

It has become more or less standard practice to use a washcoat and a sanding operation between the stain coat and the filler. For this purpose, when it is to be used over water stains or non-grain-raising stains, I prefer shellac as a washcoat rather than lacquer sealer or

for color retention on light finishes-here is

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WATER WHITE

It's a new, time-tested material for preserving the original color of those beautiful grays, off whites, lime, pearl, sea mist, ermine and all pale, bleached and decorative effects so popular on furniture of today.

Crystal White Lacquer has excellent color retention, and it can be depended upon to protect the surface from the danger of discoloration due to exposure in the store or home.

A free working sample, together with finished wood panels showing the new colors, will be sent upon request. No obligation!

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thinned lacquer. This is because alcohol in the shellac washcoat forms a constant evaporating mixture with any moisture that might be present in the stain. The moisture then evaporates with the alcohol and is thus removed; this is not the case with sealer or lacquer washcoats, whose solvents are not miscible with water.

If moisture is present in the stain coat—and it usually is with non-grain-raising stains when used under conditions of high relative humidity—a shellac washcoat will produce a clearer finish than a lacquer sealer or thinned lacquer washcoat. On the other hand, a shellac washcoat dries slower than sealer or lacquer washcoats, and for that reason it may not fit so well into fast finishing schedules. For a washcoat over a toner made from a nitrocellulose lacquer base, a sealer or lacquer washcoat is recommended because of the faster drying and better bond between like materials.

Washcoats are used on bare wood before filling, mainly because it is desired to color the pores of the wood with a minimum staining of the flake or top surface of the wood.

It is necessary that washcoats be thoroughly dried in order that proper sanding and thorough filling may be obtained. Washcoats not thoroughly dried before the application of filler, will pick up color from the filler, causing lack of clarity in the finish. Also, they will cause poor filling and poor clean-up of filler, and they may be a source of further trouble such as bubbling and blistering in top coats.

Thinning the Filler and Applying it to Surfaces

The standard practice for thinning filler is to use a petroleum distillate such as VM&P naphtha, mineral spirits, or so-called white gasoline. Although some finishing rooms still use white gasoline, most finishers now use VM&P naphtha or a mixture of it and mineral spirits. VM&P naphtha is to be preferred over gasoline because it can be bought on a specification basis and will be supplied within close limits to that specification for specific gravity, distillation range and solvency, whereas white gasoline may vary considerably between succeeding shipments. Also, the use of white gasoline presents a greater fire hazard.

Mineral spirits, being slower in evaporation than VM&P naphtha, are normally too slow to be used alone. However, they are useful to mix with naphtha in order to adjust the evaporation rate of the thinner to meet varying climatic conditions. This is especially true in conveyorized finishing rooms where there is a definite time limit between the points where filler is applied and where the rubbing and padding begin; since for good filling, the filler on the surface of the wood should dry down to a certain point when it is rubbed and padded in. At the present time, VM&P naphtha and mineral spirits are available in almost every locality. Mineral spirits are also known as Stoddard Solvent, or they may be called "dry cleaner's naphtha."

The amount of thinner to be used may depend upon the method of ap-

Crystal Clear

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No distortion . . . no cloudiness . . . and a wonderful WAXED EFFECT with HAND RUBBED APPEARANCE

You'll be amazed at the difference in finished appearance . . . the full beauty of woods and grains . . . the ease, convenience and economy . . . when you use PERFECTION FLAT FINISHES. A grade to suit each budget and drying time. ***Write for samples.***

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FEEL THE DIFFERENCE

Perfection PAINT & COLOR COMPANY

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plication, the type of wood and kind of finish, or on local plant conditions. The opinions of different finishing foremen vary considerably on this subject. It might require some experimentation to determine the amount of thinner which will produce the best job.

Methods of Putting on Filler; Brushing, Spraying, Dipping

Filler may be applied by brushing, spraying or dipping. For large pieces of furniture, such as case goods and large tables, it is customary to spray or brush or, in some cases, both. For smaller objects, such as chairs or novelty furniture and small tables, it is common practice to dip the pieces in a tank of thinned filler.

For spraying, the proportion of filler to thinner may vary from 5-lbs. of filler to a gallon, to 10-lbs. to a gallon. Woods that are comparatively easy to fill will not require as heavy a mixture as those having large pores. More thinner is used for spray application than for brushing, because part of the sprayed thinner is lost by evaporation before it reaches the object to which it is being applied. Thinned filler should be strained before being sprayed.

For brush application, the proportion of filler to thinner may vary from 7-lbs. to the gallon to 14-lbs. to the gallon, depending again on the wood and the type of finish. If it is used too thin, there will not be enough filler deposited on the surface of the wood to fill the pores when it is padded in. If used too heavy, it will be wasted, will cause the use of too much tow, moss, rags or other rubbing materials, and will be harder to rub and pad in.

In applying filler by dipping on fine textured (close-grained) woods, such as gum, poplar, beech or tupelo, a mix of from four to six pounds of filler to a gallon of thinner is usually heavy enough. On coarse textured woods with large pores, the mix should be heavier, in which case it may vary from five to eight pounds of filler to a gallon of thinner. For best results the filler in dip tanks should be constantly agitated to minimize settling of the heavier pigments.

What to Use When Spraying Filler

A pressure tank equipped with an agitator is recommended for spraying filler. Low pressure (from 25-lbs. to 30-lbs. at the gun, with about 15-lbs. tank pressure) should be used in order that the filler will be applied wet, with a minimum of evaporation of thinner during the spraying process. If the filler is sprayed from a gravity feed bucket, slightly higher air pressure at the gun, such as from 30-lbs. to 35-lbs., may be used.

An E tip and needle with a No. 30 air cap are recommended when using a gravity feed bucket, and an E tip and needle with a No. 704 air cap when using a pressure tank. However, many finishers prefer a No. 30 air cap for either gravity or pressure feed, as it delivers a wetter coating of filler.

The filler should be applied quickly, evenly, and heavy enough so that a thick pad of filler will be formed under the tow, moss or felt,

Chet Smith, President of Smith Cabinet Manufacturing Co., Inc., says—

FOR PROTECTION AGAINST FIRE WE INSTALLED FIVE M&E WATER WASH SPRAY BOOTHS

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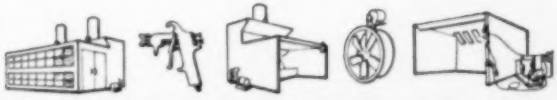


PAINT SPRAY FINISHING SYSTEMS

M&E MANUFACTURING COMPANY • 2569 WINTHROP AVENUE INDIANAPOLIS 5, INDIANA

or whatever material is used for padding the filler into the pores of the wood. It is good practice, immediately following the spraying of filler, to brush it across the grain of the wood, using a long bristle brush. Brushing not only assists in distributing the filler evenly over the surface, but it breaks up any small air bubbles in the wet film due to the spraying operation, and allows the filler to get down into the pores of the wood.

Padding in Filler; When to Start; How to Do It

The next step in the filling operation is the rubbing or padding of the filler into the wood. There are differences of opinion as to the proper time to start padding. Under normal conditions, the padding should begin soon after the filler flattens down; that is, when the wet appearance has disappeared from the surface but while it is still moist and soft beneath the top.

Padding in and rubbing filler by machine. Photo, courtesy of Franklin Balmar Corp.

Various materials are used to pad filler into the wood, such as tow, sea moss, burlap and felt. The material should be soft enough and fine enough textured that it will not scratch the surface nor dig the filler out of the pores. A padding machine consisting of felt blocks mounted on a slowly revolving wheel does an excellent job of preliminary padding. Such a machine is moved back and forth across the surface while the revolving pads force filler into the pores. Likewise, when the padding is done by hand, a circular motion, but moving across the grain of the wood, is recommended.

After Padding, Wiping; Differences in Wood Pores

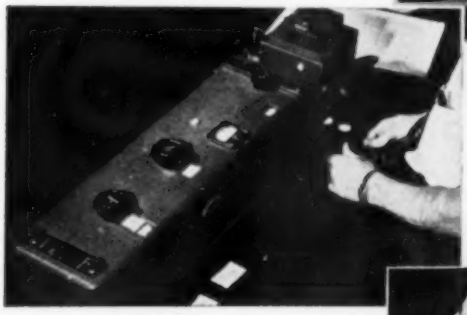
The point to be emphasized here is to *apply enough pressure to force the filler down to the bottom of the pores.* This requires bearing down, especially if the padding is done entirely by hand. Sometimes, the operation is referred to as wiping filler, and too often it amounts to just that. Filler can be wiped off so that the pores appear to be filled level with the surface of the wood, yet it may not be packed firmly into the bottom of the pores. In such a case, when a heavy coat of lacquer or sealer is next applied, the solvents penetrate through the "crust" into the cavity beneath. Vapor, formed below, pushes out and you have bubbles or blisters in the coating, or blow holes or pinholes in the film.

After the excess material has been removed by the preliminary

Finishing problems? Call on our

20 HAPPY WORRIERS!

THE PRIDE AND JOY of Jamestown Finishing Products Inc.'s new modern plant is the laboratory with its 20 research chemists — all expert at "worrying out" solutions to your finishing problems. Here a workman is checking the gloss, reflective quality and uniformity of color of a batch of AVALEX lacquer.



SPECTROPHOTOMETER — Jamestown chemists constantly analyze, study and improve to maintain the superiority of AVALEX industrial finishes. This spectrophotometer scientifically and accurately measures color values to make sure the finished product is just what the customer ordered.

TEST CABINET subjects Jamestown finishes to rigorous salt-fog corrosion and humidity corrosion tests. These are but a few of the quality control measures that make AVALEX industrial finishes worthy of your product. Let us help you with your finishing problems!

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SALES. The colorful, sparkling DULUX finish on this tractor helps promote a sale in a dealer's showroom.

PROTECTION. DULUX Tractor Enamel has the toughness to take hard knocks on the job . . . keeps its good looks despite years of outdoor exposure.

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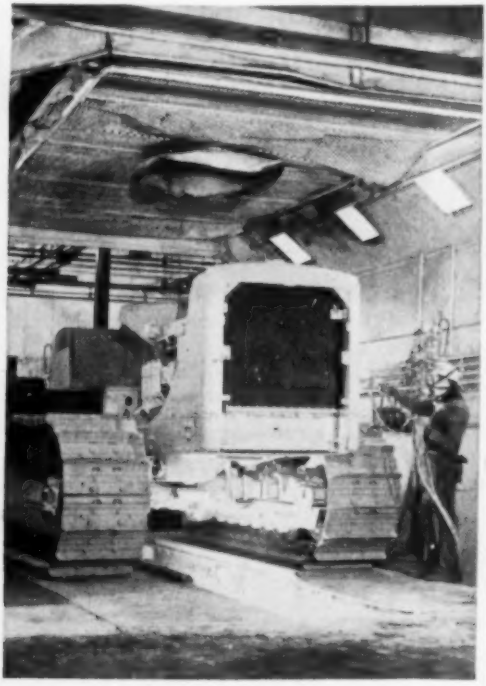

OUTPUT. The performance of DULUX helps a tractor manufacturer keep finishing time at a minimum while producing a finish of maximum durability.

DULUX does

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all-round job for tractors

DULUX Tractor Enamel is one of the many Du Pont finishes that have helped manufacturers turn out better products—faster—more economically. In the last twenty-five years, Du Pont chemists have developed more than 12,000 special-purpose finishes like this to serve a wide variety of industries.

Looking for a way to cut *your* manufacturing or maintenance costs? Looking for a finish that will make your product look better, sell better, last longer? You can get expert help on *any* finishing problem by contacting the Du Pont Finishes sales technician in your area . . . or by writing E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Del.

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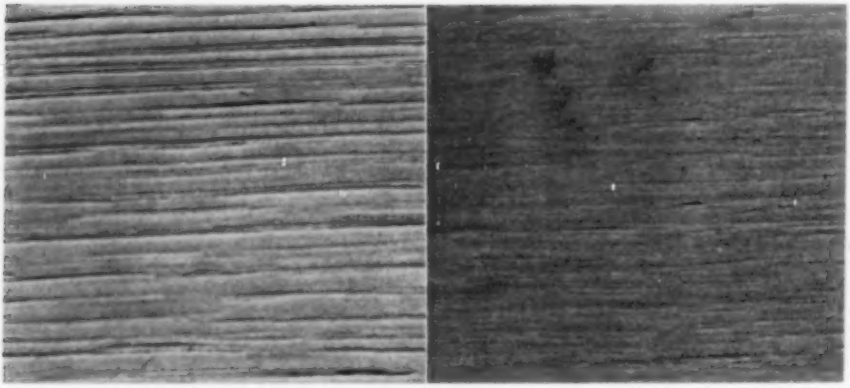

Method of visual comparison of filling results, developed by John Whiteside and Richard Tuttle of The Lilly Co., is illustrated above. These cuts were made from the photographs of plaster casts made of two similar oak panels which had previously been filled and coated with lacquer sealer. These panels were selected because the wood had large deep pores.

On the plaster cast, the depressions in the surface of the filled panels protrude above the flat surface of the cast. The proturbances are accentuated and made easy to see by fogging a thin mixture of black lacquer with a spray gun held nearly parallel to the surface.

The panel at the left was filled as is usual in many finishing rooms.

The one at the right shows a panel filled by the double applicatioon and padding method.

padding—either by machine or by hand—the surface should be gone over again by hand with a soft pad well covered with filler, to make certain that each pore is packed full. It is well known that the pores of different woods, and even various cuts of the same wood, differ greatly in size and shape. Some woods are known to be much harder to fill than others. Some pores are long and narrow, yet they may be shallow or deep. On swirly cuts, there will be much end grain with small but deep pores.

Double Filling; Pre-Filling; Purpose; Final Results

In the past, double filling was often practiced on hard-to-fill woods. This was expensive and time consuming, as it meant two complete operations of applying, padding, cleaning up and drying of the filler. Also, while it might have shown some improvement over a single filled job, many times it did not give a satisfactory job. This was probably due to the fact that just enough hard dried filler was left in the pores from the first filling to prevent anchoring the filler into the pores the second time over.

Another method of double filling, sometimes called "pre-filling," does not cost a great deal more nor consume much more time that the ordinary single filling operation. The effective results obtained (by pre-filling) in eliminating "graininess", increasing the apparent build of coatings, and often in solving an

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Strictly pure, of course, and carefully made from fine ingredients, Day's Shellac is trade-marked Du-Pros from the double process which produces the best shellac varnish.

Industrial Finishes for Application by All Methods

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JAMES B. DAY & CO.

CHICAGO 14

exasperating condition of bubbling or blistering in coatings, have at times been almost amazing. Yet many finishers seem to have no knowledge of this method or of the results that can be obtained.

In the pre-filling method, filler is applied and given a preliminary padding, usually with a padding machine. The piece then is taken at once to a station where filler is applied again. This time a thorough padding operation takes place followed by a careful cleaning up. Then the filler is allowed its normal drying time before being coated.

Theory Behind Pre-filling; Packs into Pores Better

The theory behind this pre-filling is that while the filler from the first application is still soft and workable, the added filler from the second application pushes it down and completely packs it into the pores. One application is usually by brush and the other by spray.

Often one extra workman, with a padding machine, can perform the preliminary application and padding operation. However, whether one, or two or even three extra men are required, the improvement in results more than justifies the added cost. In fact, in most instances, savings in the total finish will be far greater than the added cost of this method of double filling, while the improvement in the finish is usually remarkable.

After the padding operation has been completed, the filled surface should be wiped across the grain of the wood to remove any excess filler, and to make certain that the surface is left clean. Tow, or some heavy cloth, not too coarse, and preferably one that has been washed to remove its sizing, will do. *Following this cross-grain wiping, the surface should be wiped gently with the grain of the wood, with a softer cloth, to remove any cross-grain streaks.*

The final operation is to clean out inside corners, flutings, route lines or other hard-to-reach areas. A filler pick brush made of fiber bristles is satisfactory for this purpose on fine textured (closed grained) woods such as gum, maple or cherry, but it should not be used on coarse textured woods having large pores, as the bristles will remove filler from the pores. Nor should filler be blasted out of corners or crevices with an air duster, as this method is quite certain to blow some of the filler from the pores of the wood.

Drying the Filler; Allow Enough Time

To keep pace with the modern accelerated finishing schedules, a number of methods have been tried in an effort to produce faster drying fillers. In some of these developments, fast drying oils or varnishes, or resins that dry by evaporation and polymerization, have replaced the linseed oil and dryers of old-time fillers. In others, the vehicle solid content has been reduced to produce a filler that can be coated after a shorter duration of time. In another kind of filler the liquids have little drying action, but are compatible with the solvents of the coating to follow.

Although these new fillers have been successful for certain jobs and

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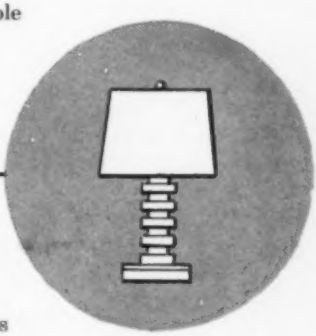

Clear Duranite Enamels—keep brass looking new . . . won't stain, craze or discolor.

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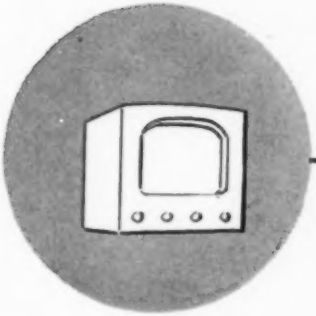

Duranite Wrinkle Finishes—distinctive, long wearing coatings for office and factory machines.

ZAPON® "Service from every angle"

A custom-tailored ZAPON finish can improve your product, too. And ZAPON "Service From Every Angle" will recommend not only the right finish, but also the most effective production methods on your own finishing line.

ATLAS POWDER COMPANY WILMINGTON 99, DELAWARE

for Industrial Finishes • Stamford, Conn. • North Chicago, Ill.

for certain colors, it is the writer's opinion that there is still much to be accomplished in making a perfect fast-drying filler for normal air-drying conditions. However, with the use of ovens or heat tunnels, excellent filling can be obtained, on comparatively short drying schedules, with adaptations of the old overnight-dry type of filler. It is believed that intensive research and development work on fillers is now being carried on by many manufacturers of finishing materials.

Consider the Coating to be Applied Over Filler

When considering the proper drying of filler, it is necessary also to take into account the coating to be applied over it. A sealer or lacquer with a normal composition of solvents should, when applied, wet into the top surface of the filler in the pores of the wood. This action, assuming that the filler has the proper color and strength of color, will produce a sharp, clear color at the pores. If the filler is not sufficiently dry when a coating is applied over it, or if the solvents in the coating are too strong, a puffing or heaving of the filler will take place. This is often confused with "orange peel" in the coatings. Many times lacquers or sealers have been condemned for poor flow or "orange peel", whereas the real fault was in the improper drying of the filler.

In conclusion, while there still may be many advancements to be achieved in producing better fillers, particularly of the quick-dry type, it is the writer's belief that in most finishing departments the filling job can be improved with present materials. To do this will require careful preparation of all surfaces to be filled; close attention to the details of applying, padding, cleaning up and drying of filler; careful and intelligent inspection; and, finally but not least, an appreciation of the importance of the filler department by the management.

Bristol Names S. E. Gewin St. Louis District Manager

Sam E. Gewin has been appointed District Manager of the St. Louis office of The Bristol Company, Waterbury Conn., manufacturers of recording and controlling instruments, according to H. E. Beane, Vice President of Sales.

After graduating from the University of Alabama in 1934 with a degree in Chemistry, Metallurgy & Ceramics, Mr. Gewin was associated with the U. S. Industrial Chemical Company for 3 years prior to joining the Bristol Sales organization in 1937 as sales engineer. He has been resident sales engineer in the Buffalo area for the last five years.

Mr. Gewin's new headquarters will be in the company's St. Louis office, located in the Cotton Belt Bldg., St Louis 2, Mo.

Mercer Oil & Chemical Co. Offers Special Services

Modern facilities for manufacturing, packaging, storing and shipping under private label, the liquid products of companies who wish to market in the industrial east and save plant space, labor, equipment and shipping costs, is announced by Mercer Oil & Chemical Co. Inc., 7th & Fishers Ave., Philadelphia 20, Penn.

The company rigidly controls all processes and services to customers' exact specifications, handles petroleum products, chemicals, solvents, coal tars, fire extinguisher and lighter fluids and similar liquids. A letter will bring full details on the firm's services.

AN OPEN LETTER TO

FURNITURE MANUFACTURERS:

Gentlemen:

With comparatively few exceptions, the furniture manufacturing industry ranks as one of the least efficient of the mass production industries in the country today.

A careful government survey has indicated that the INDIRECT labor in the furniture finishing end of the industry runs as high as 72%. This labor is in no way reflected in the value of the product! Money spent in indirect labor today is irretrievably out the window.

Of course, I'm talking about conveyorizing your finishing department. Any conveyor is better than no conveyor—BUT—the DeBURGH SYSTEM is more than a conveyor. It is a machine that turns out a definite product, with control quality, definite daily production with all variables removed, and at such an efficient rate that DeBURGH SYSTEMS pay for themselves usually within the first year, from indirect labor savings alone.

Due to patented features, the DeBURGH SYSTEM will enable a manufacturer to cut production radically and retain within a fraction the same low per unit labor cost that peak production has made possible on the DeBURGH.

Process inventory is reduced from a matter of days to a matter of hours.

A good finish is established, and production then remains constant, despite outside weather changes. Bumping and bruising are eliminated—touch up due to handling is no more.

The system is not a speed-up. It operates flexibly at a man's smooth working pace.

Production in the finishing department can be increased very materially. Savings up to fifty per cent can be realized. Space used for finishing can be reduced as much as thirty-five per cent.

Gentlemen—you are paying for a DeBURGH SYSTEM every day you operate without one.

There is no charge for an engineering layout and an estimate of what it would cost you to enjoy not only the above advantages but many more too numerous to mention here.

INVESTIGATE! Write, phone, or wire collect today.

Yours truly,

R. DeBurgh

Investigate!

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ATTRACTIVE ONE-COAT COVERAGE FOR METAL PRODUCTS

Machines — from sewing to adding . . . boxes — from tackle to lunch . . . and hundreds of other metal products look better and stay better looking with Rockford *Wrinkle* Finishes.

In these quality-controlled specialty finishes you get complete, economical one-coat coverage even including metal imperfections and blemishes; a tough, durable protective surface; and a distinctiveness that puts more life into metal items.

Whatever your requirements, drop us a line and we'll comply promptly with a solution to your wrinkle-surface problem. If you have an Army or Navy contract calling for wrinkle finish, we can work with you to help meet rigid AN specifications.

Research, Quality, Service

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Manufacturers of Protective and Decorative Coatings

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Superb

Where many products are concerned, the use of a *satisfactory* coating is not enough. It may often be vital that a finishing material be Superb in every respect . . . that it possess qualities of outstanding beauty, long life, and unusual resilience as well. Choice of such a finish is a problem to be solved by experts, who can put their facilities, experience, and know-how to work in developing a custom-tailored coating with specialized characteristics. If *you* have a product-finishing problem that needs careful attention, may we suggest that you send us a sample for recommendations by our laboratory. No obligation of course. . . .

Research, Quality, Service

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ROCKFORD ILLINOIS

Manufacturers of Protective and Decorative Coatings

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

Metal Dent Filler

We would appreciate your sending us the name of the manufacturer of "Metal Dent Filler", as noted in your April 1953 issue, page 84.—*P.C.Co.*

In a letter we are naming four sources of supply for this and similar material.—*Editor.*

Humidity Indicators

We are interested in obtaining humidity indicators, as mentioned in Random Comment for June 1953, page 4. Please advise source.—*V. Co.*

Those referred to in June issue are supplied by Andrew Technical Service, 3805 N. Clark St., Chicago, Ill.—*Editor.*

Pearlescent Finishes

Will you help us locate a paint material which, when it is applied to materials such as fishing lures, etc., gives off a pearlescent color effect? Actually the lures we have seen can be compared to the inside of an abalone shell, excepting that the various colors are not as predominant as they appear in the natural state. This finish appears to have been baked, as it is of a very hard glassy texture.

We have tried various sources here on the West Coast but with no luck. We have heard the finishes referred to as Pearlene; Pearlescence, and "glassy" and we are not certain which of the names actually is applicable. From this meager description we hope you will be able to give us the name of the manufacturer of this paint product.—*D.P.Co.*

It's probably a pearlescent lacquer. In a letter we are listing the names and addresses of several concerns who can supply it.—*Editor.*

Want Nylon Flock

Could you give us the name and address of a supplier of Nylon Flock for spraying purposes?—*A. Geneva, Switzerland.*

In a letter we are naming several suppliers of flock, some of whom can probably supply nylon.—*Editor.*

Aerosol Containers

On page 4 of May 1953 issue we have seen a photograph of a small container which is spraying its content. We would like to know if this container can also spray finishing liquids . . . . and other information about it.—*L.V.S., Milan, Italy.*

Ask Sprayon Products, Inc., 2073 E. 65th St., Cleveland 3, Ohio.—*Ed.*

Supply Hot Lacquer

On page 78 of July issue we notice someone is interested in the hot spraying of lacquer and we would appre-

Finish FASTER with BELTS ...at less cost!

2 NEW MODELS "61" Port-A-Belt GRINDING ATTACHMENTS

TRADE MARK

Now CARBORUNDUM offers *four* portable belt grinding attachments to help you increase production and cut costs. The two newest models of the "61" PORT-A-BELT* Grinding Attachment permit your operators to reach additional hard-to-get-at spots because the "61" serrated rubber contact wheel is mounted on the extended arm and the idler pulley on the tool spindle. Thus these two new models complement the two present ones with the "61" contact wheel on the tool spindle.

All four "61" PORT-A-BELT attachments fit nearly all standard-make horizontal portable grinders—electric or air. All four use the revolutionary "61" wheel principle: belts grind faster, last up to twice as long. There is no bounce...no chatter. One operation often replaces two or three conventional finishing operations.

Find out today how you can enjoy the unique versatility and economy of belt grinding with portable equipment. Call your CARBORUNDUM distributor, listed under "Abrasives" in the yellow pages, or send the coupon.

*TRADE MARK

by CARBORUNDUM

REGISTERED TRADE MARK

...the ONLY source for EVERY abrasive product you need

SEND TODAY!

THE CARBORUNDUM COMPANY, Dept. IF 82-38, Niagara Falls, N. Y.

Yes! Send me your folder on "61" PORT-A-BELT Grinding Attachments.

NAME AND TITLE

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ciate receiving the address of this particular manufacturer, as it may lead to something of mutual satisfaction.

We are enclosing, for your interest, a copy of a booklet which has been prepared by our organization and which reveals certain details of the Hot Lacquer process.

Our organization has invested a substantial amount of money in the research and development of Hot Lacquer since 1946.—*Titanine Inc.*

Thank you for the book (36 pages 8x11-in.); it is attractive, interesting and informative. In a letter we are naming the concern that inquired about Hot Lacquer.—*Editor.*

Paints Green Trees White

On page 78 of June 1953 issue of *Industrial Finishing*, we see an inquiry as to the proper process for painting green trees white. We have had considerable experience in the formulation of paint products for this type of requirement, and would appreciate your giving us the name of the concern that is interested in this process, so we can supply them with the necessary information.—*The O'Brien Corp.*

Going to try airless spraying at the plant?

Information supplied.—*Editor.*

Removes Paint Drops

We are interested in obtaining information as to what companies manufacture or handle the sale of a detearing device for removing paint drops from both wood and metal.—*R. V. Co.*

Only one we know of is Ransburg Electro-Coating Corp., 1234 Barth Ave., Indianapolis 7, Ind.—*Editor.*

Catalyst Spraying

We have just finished reading the three inquiries about "Catalyst Spraying," as published in June 1953 issue of *Industrial Finishing*, on page 80.

We manufacture a one-solution, water white, catalyzed urea that uses a conventional spray gun. No special equipment is necessary to apply this material. It dries to handle in 30 minutes and air dries print-free overnight.

If this information is of any help, we would appreciate your passing it along to manufacturers who are interested in this type of material.—*Wabash Products Co.*

Zinc to Gold Color

We refer to one of the "Letters from Readers" in May 1953 issue of *Industrial Finishing*, page 90—the one headed "Zinc to Gold Color." We would appreciate receiving the names

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BUT NOT FOR MODERN INDUSTRIAL NEEDS!

The Oriental potentate may be happy with the comforts of his old-fashioned bath—but YOU cannot afford to be satisfied with old-fashioned washing methods.

INDUSTRIAL WASHING MACHINES

CUT COSTS • SPEED UP FINISHING PROCESS • KEEP QUALITY HIGH
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No matter what product you manufacture, whether your finishing process includes Washing, Rinsing, Drying, Phosphate Coating or any combination of these operations, **there's an INDUSTRIAL machine for the job.**

Find out how Industrial Washing Machines can help you—write Dept. IF-7 for detailed information.

INDUSTRIAL SYSTEMS COMPANY
Exclusive Sales Agents
for Industrial Washing Machine Corp.
New Brunswick New Jersey

ISC

of concerns who supply finishing materials for use in finishing zinc die casting to simulate brass and gold plating, etc., through paint application.—*A. Casket Co.*

We notice in the "Letters from Readers" in July 1953 issue, an inquiry under the heading, "Zinc to Gold Color" and that the information was supplied. It may be that you gave them our name; if not, we would appreciate your passing on to us the correct name and address of the inquirer.—*Standard-Toch Chemicals.*

Information supplied.—*Editor.*

"Mr. Beasley, how can I prevent a drip in our department from bothering me?"

Stirring and Straining

The May 1953 issue of *Industrial Finishing* magazine carried an article under the heading "Stirring and Straining". Throughout this article there were several illustrations of machines used for agitating and stirring. Would it be possible for you to advise the writer the names and manufacturers of the various machines illustrated?—*W.S.Co.*

Yes; in a letter we are identifying them.—*Editor.*

Canada Firm Interested

In the July "Letters from Readers" are two inquiries, one from Buck's Baits and one from M. Plating Co. In one instance the inquiry has to do with metalizing by silver reduction, and in the other paint spray masks. We are interested in these inquiries, particularly if they originate in Canada. We are in a position to supply materials and information for metalizing, as well as building precision spray masks.—*John Walter & Sons.*

One of the firms is in North Carolina and the other is in Ohio. In a letter we are revealing the names and addresses of the firms.—*Editor.*

Catalyst Spray Gun

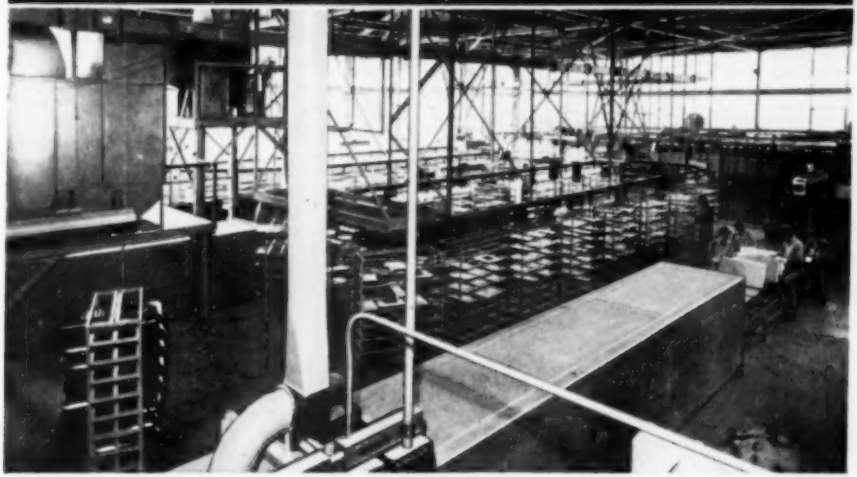
I wish to refer to your article on page 36 of April 1953 issue of *Industrial Finishing*, where a catalyst spray gun is illustrated. Please let me have the name of the manufacturer of this gun.—*E.H.W., South Africa.*

It is a product of Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill.—*Editor.*

Making Glue Size

In May 1953 issue of *Industrial Finishing*, we notice that Glue-Life No. 24 is mentioned in an article about "Making Glue Size", pages 98

FROM LAYOUT THROUGH INSTALLATION...



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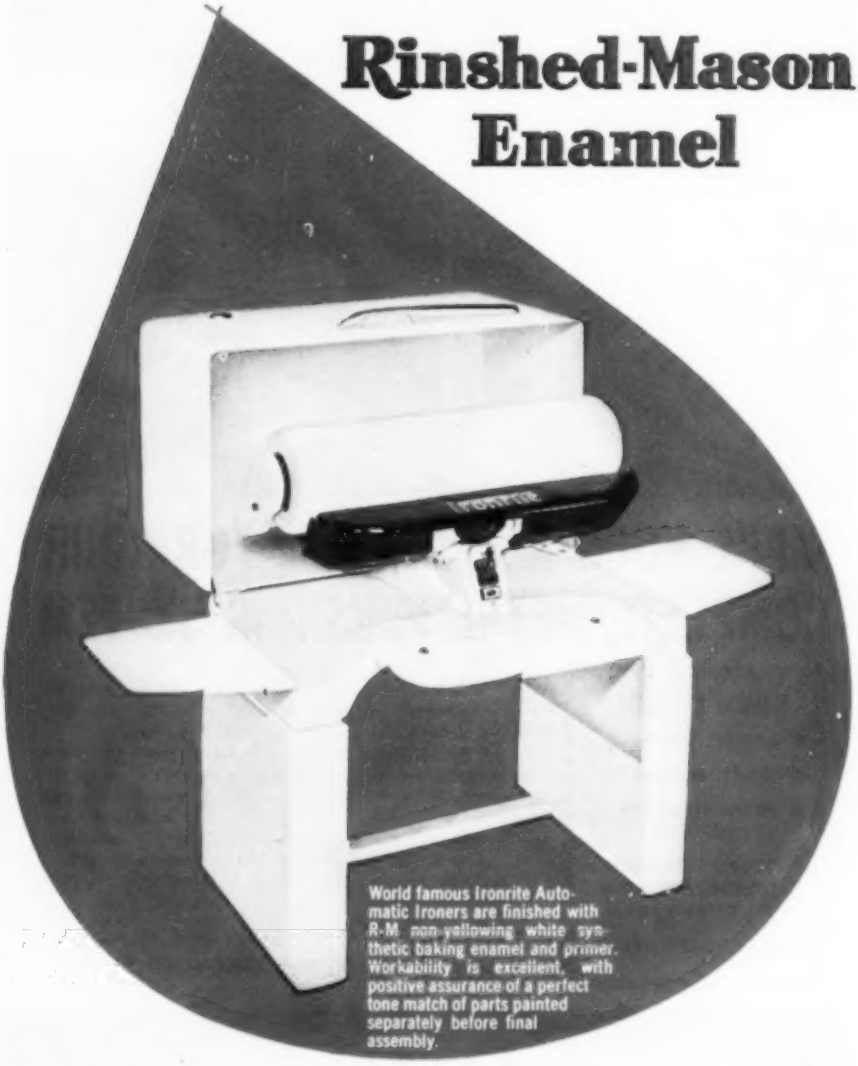

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IN CANADA: STANDARD PAINT & VARNISH CO., LTD., WINDSOR, ONT.

and 100. We are interested in this product, but it is not clear who is the manufacturer. Could you help us come in contact with the manufacturer?—*N.K., Lillestrom, Norway.*

Contact Liquafill Mfg. Co., 823 Richard St., Dayton 3, Ohio.—*Editor.*

Bubble Trouble in Dip Tanks

Will you please send us five or six tear sheets of the article entitled, "Air Bubble Trouble in Dip Tanks," which appears on page 88 of March 1952 issue of Industrial Finishing magazine, or November 1952 issue, page 68?—*G.P. & F.*

Our supply of tear sheets of both articles is exhausted, but fortunately we have reprints of the 11-page Dipping article that apeared in Nov. 1952 issue of *Industrial Finishing.* We are sending you some copies of these reprints. They are ten cents a copy (postage stamps accepted).—*Editor.*

"Those two jerks have closed the vents and put alcohol in the lacquer again."

Supply Graining Rollers

We will appreciate it if you will add our name to your list of graining roller manufacturers.

One of your subscribers here gave us your July issue and we noticed several of your readers requesting a source of supply for graining rollers.

We have many years' experience making this type of roller and can make sizes ranging up to 44-in. in diameter.—*Apex Printers.*

Bleaching Solution

We would like to know if you have a bleaching solution that will remove streaks in our maple tops. We have a solution which we use but it is not satisfactory. Any information you send us will be greatly appreciated. —*B.C. Co.*

No, but in a letter we are naming several suppliers of bleaching materials that are especially formulated for use on wood.—*Editor.*

Hot Dip Process

Referring to an inquiry under the above title, which appeared in "Letters from Readers," in June issue, page 74, Bede Products, Inc., 1110 Brookpark Road, Cleveland 9, Ohio, advises that it has a hot dipping process.

Another company (one in Michigan) which believes the inquiry refers to its process, requests that its name be withheld from publication at this time, as it is not prepared to handle the inquiries that would result from any publicity on the subject. Later it hopes to give permission to release some publicity about the process.—*Editor.*

Glue Sizing or Not?

In July 1953 issue, page 88, we read an article about the merits of glue sizing wood surfaces before finishing. Where one has contrasting finishes, such as let us say, a platinum oak, or a finish on oak where a white filler is used and where in some cases it is necessary to wire brush the wood to get the filler to penetrate properly, we are not sold on this glue sizing operation. In fact, if we were to glue size, we're inclined to believe we wouldn't be able to produce some of the finishes that we now have.

We would like to have your comments; maybe we're on the wrong track in our finishing program. Possibly you have some suggestions.—*O. Casket Co.*

The answer to your inquiry about glue sizing is going to be rather general because local conditions, types of wood, species of wood, and finish effects—all must be considered when a decision is made to use a glue size. The object of glue sizing is usually to obtain one or more of the following results:

1) To control the wood pores. This is especially true in tropical woods such as mahogany, where the pores contain small cells that are particularly sensitive to moisture.

2) To stiffen the surface fibers in a "fuzzy" type of wood so these fibers will be broken off or cut off clean instead of being pressed down by fine sanding.

3) To help control or uniform the surface hardness of the wood where different woods are used in a common structure. This uniforming treatment by glue sizing allows a more uniform color pattern to be obtained in the finishing process, since the glue sizing controls the amount of penetration of any stain or finish color into the wood.

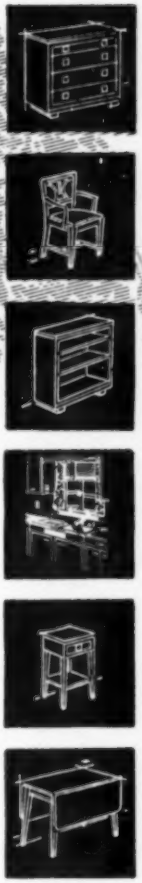
Some woods rarely need glue size. Oak is one of these. Walnut, however, is spotty as far as fuzzy surface conditions exist, and on this wood, when a finish color is selected, I suggest that you either glue size every piece or forget the operation entirely if color uniformity from unit to unit is required. Mahogany should always be glue sized because of its grain and pore structure.

Most manufacturers prepare either glue size by "cutting" or "reducing" a liquid adhesive glue anywhere from 8 to 1, to 12 to 1. Very little difference can be distinguished between these formulations. As far as the glue size closing the wood pores to a point that a contrasting filler cannot be seen—well, if a 10 to 1 cut of glue size fills the pores then the filler couldn't be seen anyway.

This question seems to deal with oak and, as before stated, there is no good reason for glue sizing oak. On other woods, I suggest that you finish some samples with and some without glue sizing. Then be your own judge as to the value of the operation.—*Herman Hardesty.*

The purpose of glue sizing wood before finishing is to raise and stiffen the fuzzy surface fibers of the wood; then sand these to cut them off rather than press them down so

UNICOTE
(Synthetic Undercoat)



Opens new roads for using fir and other marginal woods!

Excellent filling and holdout properties are two of the advantages which make United's UNICOTE, synthetic undercoat, ideal for use on fir and other open grained marginal woods.

When coated with UNICOTE and then covered with a synthetic enamel or other top coat, these woods give the appearance of, and can be used as gum woods.

UNICOTE is easily sanded, dries quickly, and requires only one coat. It holds down the wood grain while preventing a glossy top coat from sinking in.

A generous working sample of UNICOTE is yours for the asking. Get yours today.

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LINDEN, N. J. PHILADELPHIA 19, PA.

that when an NGR (non-grain-raising) stain is applied, little if any raised grain will appear.

Another purpose is to uniform the wood surface to prevent any mottled streaky or uneven effects due to stain penetrating some areas more than others.

A slightly different way to get practically the same effect is to wash coat the surface, using either a thinned shellac or lacquer sealer (one part to four parts of thinner); then sanding after drying.

In either case the glue size or wash coat must be thinned down so that part of the material will be absorbed by the wood and so that no appreciable film building occurs. The purpose back of either method is to uniform the wood surface and to help the finisher produce a smooth finish. I do not see that either method will prevent you from applying any type of finish you desire, if the size or wash coat is properly mixed and applied, dried and sanded. Why not experiment with some test panels, using both methods, and then determine which gives you the results you desire?—*P. C. Bardin.*

Drying Tunnel After Roll Glue Sizing

Mr. Thomas: Your article entitled "Glue Sizing Before Finishing," as published in the June 1953 issue of *Industrial Finishing* is of considerable interest to us since it indicates that drying tunnels are useful at the out feeding end of roll spreaders (as mentioned on page 72).

It appears as though this sort of an application can be handled by either Chromalox Radiant Heaters or Radiant Panels, as described in bulletins we are sending you.

Could you advise us names of manufacturers of such roll spreaders in order that we might get in touch with them and evaluate this problem?

If you have any ideas along these lines we would certainly be happy to have an expression from you.—*W. L. T. (Edwin L. Wiegand Co.)*

We are in the process of installing a roller spreader for glue sizing in one of our plants. If it proves to be satisfactory in every way, we plan to install roll spreaders in five of our six plants. I have seen some of them in operation in other furniture factories and they seemed to be doing a good job.

Radiant heaters, for use in drying tunnels at the outfeed end of the roll spreaders, do all right for quickly drying the liquid size coating. However, I wouldn't advise putting electric radiant heaters in a room where wood sanding dust is flying in the air, because there is a possible danger of fire being started by a dust explosion. In many factories the glue-size roll spreader is installed in or near the sanding department where there is always a lot of dust, even where dust collecting systems are in use. Our roll spreader is being put in the sanding department too, but we plan to dry the thin coat of sizing with a flow of hot air from steam heated coils. One or more fans will blow the air through or across the steam coils and flow it over the size-coated panels. We believe this will be less hazardous from a possible fire standpoint.—*O. Thomas.*

New Carboline Sales Representative

Carboline Co., St. Louis, Mo., specialists in corrosion resisting synthetic materials, announces the appointment of Seymour J. Fiebach as sales engineer in the metropolitan New York area.

Mr. Fiebach has sold industrial chemicals in the area since 1948, and was previously an instructor of chemistry at Brooklyn College in New York City.

There is no more convincing proof of Egyptian Industrial Finishing Laboratory "Know How", than the increasing number of "well done" handshakes Egyptian Finishes Specialists earn from enthusiastic product manufacturers everywhere.

Put to your use, as thousands of progressive manufacturers do, the highly specialized knowledge of your Egyptian Specialist and the ingenious Egyptian Laboratory Technicians behind him. Let them help you develop an outstanding coating for your product . . . and remember . . . Egyptian assistance does not end here. Your Egyptian Specialist can keep you constantly informed of new finishing techniques and how you can benefit by them . . . he can tell you the specifications for finishing any Government Product . . . help you break finishing bottlenecks in your plant. Often his suggestions result in reduced overall finishing costs.

Invite an Egyptian Industrial Finishes Specialist to call on you today.

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For Finishing Boats

I have just read the article, "Glue Sizing before Finishing", in June 1953 issue of *Industrial Finishing*. We are in the small boat business and are always on the look out to improve the quality of our products.

Would it be possible to use this method of finishing on our product, which has to stand up in all kinds of weather? If so, I would appreciate any information you might be able to give me, in regard to methods and kind of glue to use.—*B. T. (Manufacturer of Outboard Motor Boats)*

No, you wouldn't use glue sizing on the woodwork for boats because glue (that is the type of glue generally used for sizing) is soluble in water. Whatever company is supplying you with a high quality marine varnish, this firm can also supply you with a high grade sealer that will work well with the marine varnish you use as a finish coat. Or a marine varnish thinned with suitable thinner to half or less than half of its regular solids content (or consistency or viscosity) may serve in an emergency as a sealer coat to be applied to the bare or stained wood.

What is desirable is a penetrating type of sealer, one that sinks deep into the wood, one which is water resistant and at the same time compatable with finish coats to be put on over it. The spar varnish or marine finish put on over that sealer should unite with the sealer or "weld" itself to the sealer so there will be excellent adhesion of the entire film of waterproof finish to the wood.

Please read Robert M. Trainer's article "Finishing Owen's Flagships," as published in May 1953 issue of this magazine.—*F.M.*

Two Sections Are Added by NACE in Northwest

The 33rd and 34th local sections of the National Association of Corrosion Engineers have been added in the rapidly expanding industrial region of the Pacific Northwest. The Association's Western Region board of trustees has approved formation of the Columbia River Basin Section; and the newly organized NACE Canadian Region has approved formation of a British Columbia Section at Vancouver.

Mark Adams of the State College of Washington will organize the Columbia River Basin Section. The new Canadian Section is the third to be organized in Canada this year.

DeVilbiss Co.'s Canadian Subsidiary Expands

The DeVilbiss Mfg. Co., Ltd., Canadian subsidiary of the DeVilbiss Co., will shift manufacturing operations from Windsor, Ontario, to a new $600,000 modern plant at Barrie, Ontario, about December 1. Barrie is about 45 miles from Toronto.

Construction of the 63,800-sq. ft. Barrie plant will be completely financed by the Canadian subsidiary which has grown from a warehousing and distributing operation originally chartered in 1911. The Austin Co., Ltd., of Toronto started work on the project July 20.

The Canadian plant, headed by George V. Jacquemain, president, now manufactures the complete line of DeVilbiss atomizers and spray painting equipment for distribution in the Canadian market.

Purpose of the shift of operations is to effect reductions in freight costs which will be possible because of the concentration of suppliers and many customers in the Barrie area.

The new plant of DeVilbiss Mfg. Co., at Barrie, Ontario, will be ready in December, 1953.

Contact O'Brien on any Finishing Requirement! Lacquers, enamels and undercoatings for spray or dip applications!

Profit from the experience of others—see why O'Brien lacquers, enamels, undercoatings and other industrial finishes apply easier, perform better, last longer and cost less, regardless of application. Call on O'Brien for *real help on any finishing problem.* The famous O'Brien technical and laboratory facilities are at your disposal—ready to develop special products for your particular needs. For further information or cooperative research, write Industrial Sales Division, The O'Brien Corporation, South Bend 21, Indiana.

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The formulation of lacquers and sealers to meet rigid specifications and to withstand all elements can be accomplished only from this long experience.

Take for instance, Stille's famous "Duet"—

No. 6200 Lacquer Sealer

No. 6395 Clear Top Coat Lacquer

meets the high standards of the R. T. M. A. specifications and goes beyond in most instances.

The top coat can be had in any degree of sheen. The sealer takes a cold check test in the same amount as the top lacquer.

Order a trial lot—or may we have our representative call with additional particulars?

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Manufacturers: **LACQUERS, STAINS, SEALERS, FILLERS, ENAMELS, ETC.**

3950 N. Lincoln Avenue

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Flock Coating Box

I notice that May 1953 issue of this magazine carries an article about Flock in which the author mentions a flock chamber, see on pages 76 and 78. In order to construct such a chamber I would like to have sufficient detailed information, and for this purpose would appreciate it if you could put me in touch with Mr. Bardin, the author of the article—*H. J. E.*

A flock chamber is a box or enclosure preferably made of metal (or composition, insulation board or wood, so long as it has tight joints) with openings at two ends to permit the loaded conveyor to enter and leave. Fans, mounted above both the entrance and exit ends of the chamber, create a sufficiently strong down draft in the chamber to prevent flock fibers from blowing out and into the room. Air vents are located at the bottom of the chamber, with vanes to direct air currents against its vertical sides, so that the fibers will be circulated in a swirling motion.

The type of conveyor to use will depend upon what size and shape products are to be coated with flock. If an overhead monorail is indicated, the rail should be cut at both entrance and exit ends of the chamber and a vibrator installed so that the product will vibrate in a vertical plane (up and down) inside the chamber. If a belt type or horizontal conveyor is used, then beater bars should be installed beneath the conveyor so that the product will vibrate up and down. Reason for the vibration is included in the article you refer to.

Some of the leading manufacturers and suppliers of flock have done considerable research on methods and equipment for use in the efficient application of flock, and I am referring you, by letter, to a few of them.—*P. C. Bardin.*

Mac's FASHION SEALERS & LACQUERS

A specially formulated sealer for the first coat under clear gloss or flat lacquers provides a good body and sands easily. Also works well under varnish and enamel. A production test will prove its superiority.

MAC'S FASHION LACQUERS are available in clear and opaque for application to all kinds of surfaces. Spray easily and give good coverage in any desired sheen. Outstanding for clearness and attractiveness. **Do not get cloudy.** Write for a production test sample and descriptive folder.

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

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Finishing Room Overcrowded?

THERE ARE several ways of gaining space and reducing congestion where crowded conditions exist. As long as the plant is conveyorized, it matters little on which level the power washer, dry-off oven, spray booths, dip tank or flow coater and the bake oven are located. Well insulated ovens are often installed on the roof of the building. It may be possible to relocate the power washer in a 4-ft. deep pit, then place the spray booths, dip tank, flow coater or bake oven on the balcony or platform immediately over the washer.

Sometimes, the finishing room is located where employees from other sections of the plant must walk through to reach their department. If the physical layout of the plant will not permit this to be changed, perhaps a partition can be built, closing off the finishing room, and still allow a narrow aisle for those who wish to reach other departments. This will reduce congestion and actually provide more working space.

A paint circulating system will entirely eliminate pressure tanks in the finishing room. These systems are available from the simple type where paint is pumped into the lines directly from the paint drum, to the more elaborate equipment. This may include huge storage tanks of 1,000 gallons or more to receive bulk shipments of paint, a series of mixing tanks and supply tanks equipped with metering valves to measure quantities of paint and solvent, filters, pumps, etc. There is a paint circulating system made to fit almost every need and volume of production. They are clean efficient and save space in the finishing room.—*Bardin.*

To Set Spray Pressures

ASKING your paint salesman or equipment manufacturer for spraying pressures does not help you in any way. Your equipment salesman or someone in his company's laboratory will give a recommendation which may be: Material pressure, from 5 to 15-lbs.; atomizing pressure 35 to 55-lbs. Your question has been answered but you haven't been told anything — that is not specifically what you want to know.

Let us suppose the viscosity of your paint is 20 seconds, as measured by a Ford cup No. 4, and the nozzle combination* is set for fine finishing.

We will assume that at 5-lbs. material pressure your spray gun is delivering one pint of material, and at 15-lbs. pressure it is delivering one quart of material. Now a material pressure of 15-lbs. and an atomizing pressure of 35-lbs. may result in poor atomization, runs and sags. A material pressure of 5-lbs. and an atomizing pressure of 55-lbs. may result in a dusty coat. There is such a wide variation in the figures, "from 5 to 15-lbs. and 35 to 55-lbs." that it covers everything, and really says nothing—that is nothing accurate.

To set your pressures correctly, I suggest the following procedure: Shut off the atomizing air; pull back the spray gun trigger; adjust the material pressure to deliver a stream of paint that travels about 3-ft. horizontally before it starts to arc toward

*For example, Binks combination 63c x 63pb.

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for the first time
AT LOW COST...
MORE PROFITS!
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LIGHT CAPACITY OVERHEAD CONVEYOR
Fully Enclosed, Continuous Powered

FEATURES—

SIMPLICITY—Engineered to eliminate complicated, fast wearing parts, Chainveyor is revolutionary in simplicity of design. TRACK—1⅝"x⅛" slotted steel tube easily installed with minimum support. • CHAIN—Full ball bearing wheels mounted on steel side links, heat-treated for long life. • CURVES—15" radii provides extreme flexibility. • TAKE-UP—Adjustable spring take-up automatically maintains uniform chain tension. • VARI SPEED DRIVE—Positive sprocket tooth drive with easily replaceable shear pin protection. • CAPACITY—30# per pendant at 6" intervals, 60# at 12" intervals when supported by 2 pendants with cross bar attachment.—up to 400# chain pull.

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Los Angeles 58, California

the floor. Now look at the gauge on your pressure tank; that reading is your material pressure.

Now set your atomizing pressure to about 30-lbs.; snap the spray gun trigger, holding the nozzle 8-in. from the work. Look at the paint particles around the outer edge of the spray pattern; some particles will be large and some will be small. Slowly raise the atomizing pressure until paint particles around the edge of the fan pattern are about even in size. Look at the gauge; that reading is your correct atomizing pressure.

This is a simple and reliable way to set spray gun pressures. No one can tell you what your pressures should be.—*Wm. Beacham.*

W. F. Hosek Heads Sullivan Chemicals Division

Walter F. Hosek has been named to head the newly formed Sullivan Chemicals Division of the Sullivan Varnish Co., Chicago manufacturer of industrial coatings.

According to Mortimer Sullivan, president, the new division will provide a personalized research and development service on chemical coatings for manufacturers in the electronic, plastic and hard goods industries.

Screen Processors Exhibit in New Jersey

The New Jersey Chapter Screen Process Printing Association International will hold an extensive screen process exhibit from September 14th to October 3rd.

The exhibit will be held at the Newark, N. J., Public Library, Washington Street, and will feature products produced by New Jersey Screen Printers.

Included in the exhibit will be posters, displays, billboards, and industrial applications such as decals, plates, dials and odd surface printing. A movie and live demonstration are also scheduled.

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BOOTHCOTE #4

FOR DRY WALL BOOTHS
PERFECT LUBRICANT FOR FORMS

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FOR WATER WASH BOOTHS
PERFECT RUST PREVENTATIVE
INSIDE STORAGE — OUTSIDE STORAGE

Makes frequent cleaning easy. Pre-mixed, ready to use, safe to store. Saves time, labor, no flaking off. Spray or brush on clean booth. When desired, operator peels off overspray in sheets. Advocated by insurance companies.

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BREAKS UP PAINT—NO CLOGGED UP SYSTEMS

HYGRADE'S STERLING CREME
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protects hands, face and arms from paint, grease, ink, etc. penetrating skin. Soil washes off easily without harsh solvents or cleaners. Paint and grime washes off. Reduces blackheads and skin blemishes.

12—7 oz. Jars—$6.00

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WATERLESS HAND CLEANER

dissolves grease, grime, fresh paint, tar, printers' ink, shellac, mastic cement, etc. without water. Use for cleaning refrigerators, ranges, etc., before shipping.

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INDUSTRIAL DIV., 18 STETSON ST.
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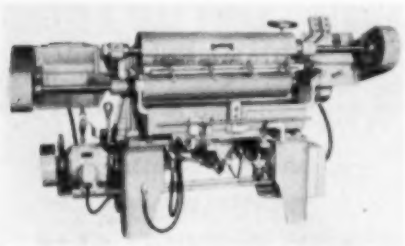
Surface Finishing Machine

A new, double-roll surface finishing machine, designated the Clair Model 202-A, has been introduced by Clair Mfg. Co. It was designed for any degree of finish, from flash removal to mirror finish.

With its two-directional, electro-hydraulic feed mechanism, this machine features a straight line actuation principle. The enclosed hydraulic circuits and sealed antifriction bearings are not vulnerable to abrasives, and remain free of lost motion for the life of the machine. An enclosed compressed air circuit opens and closes the rolls for unloading and also provides automatic float for the rolls as they follow the geometry of contoured work at any predetermined uniform pressure. Incorporated in the same air circuit is a safety bar which causes the rolls to fly apart even at light body pressure.



For surface finishing cutlery, hand tools and many other metal products.

Horizontal design allows waist-high loading, clear visibility of work being processed, and efficient dust collection to the rear away from the operator. Rolls are 40-in. in width, with diameters ranging from 4-in. to 9-in. To permit rapid change-over of operation, the rolls can be replaced in less than two minutes.

The Clair Model 202-A Surface Finishing Machine was developed through the cooperation of several producers of cutlery and hand tools for their specific applications. It is particularly recommended by the manufacturer for faces of either open end or adjustable wrenches, wrench handles, wood chisels or cold chisels, cutlery blades and handles, and surgical instruments.

For additional details on the Clair Model 202-A Surface Finishing Machine write Clair Mfg Co., Inc., 1008 S. Union St., Olean, N. Y.

Metal Cleaner for Vitreous Enamel Industry

A new metal cleaner, especially formulated for use in the vitreous enameling industry has been developed by the Detrex Corp. of Detroit, manufacturer of industrial cleaning equipment and chemicals.

Described as a medium high alkaline compound containing very high wetting and penetrating properties, the new cleaner has been trade-named Detrex 63. It emulsifies large quantities of mineral oils and greases and keeps them in a state of suspension.

Sales of the cleaner will be handled by the newly organized Enameling Section of Detrex Processing Division headed by William H. Webb, managing consultant.

When used by vitreous enamelers,

When you can SEE the difference . . . IT'S TOO LATE!

Prime with STANTITE!

One switch box was primed with Stantite, the improved wash primer, before top coating; the other was not. Exposure discovered the difference and proved Stantite's strong resistance to corrosion and rust creep. And after years of research in Stanley laboratories there are other differences you can see right off . . . Stantite handles easier; it's easier to mix and easier to spray. Add these advantages to its excellent adhesion to all surfaces and its adaptability to most top coats. The result: a wash primer that insures your finish. For full details about spraying Stantite and clear Stantite for dipping write Stanley Chemical Co., 41 Berlin Street, East Berlin, Connecticut.

STANLEY

Industrial Coatings

STANLEY CHEMICAL

LACQUERS SYNTHETICS JAPANS ENAMELS

the cleaner is particularly recommended for work requiring removal of non-pigmented drawing and stamping compounds, mineral and vegetable oils and grease, and quenching oils from ferrous parts.

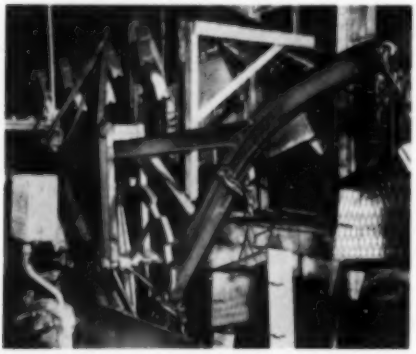
Cable-Link Conveyor Line

L. T. Daigle, President of Cable-Link Corp., Detroit, Mich., recently announced the development of cable conveyor systems under the Cable-Link trade name.

Based on the use of improved plow steel cable, cut to 16, 24 and 32-in. lengths, with steel buttons swedged on both ends, these lengths of cable are called "cable-links" by the manufacturer.

The swedged-button ends of the "cable-links" recess in the cavities of malleable steel brackets. Steel nuts, threaded on the tapered "sleeves" of the brackets, exert a 360° pressure on the cable, retaining the Cable-Link patented trolley assembly at an immovable station. Trolleys can be placed on 8, 16, 24 and 32-in. centers.

Three years were devoted to the development of the C-L systems, including trolleys, idlers, joggles, traction wheels, drives, take-ups and other components. These systems have no moving parts below the rail and very few bearing points otherwise, therefore they are claimed to be economical in power consumption.



Barbecue grilles being dipped in a degreasing solution by cable-link conveyor system, prior to being carried to a spray booth for finishing.

The Cable-Link Corp. now produces three conveyor models capable of light, medium and heavy-duty materials handling.

A complete new 6-page brochure describing these systems can be obtained by writing the Cable-Link Corp., 20175 John R St., Detroit 3, Michigan.

Heavy Duty Vacuum Cleaner

A heavy duty portable vacuum cleaner for maintenance use in industrial plants is announced by Premier Co., 755 Woodlawn Ave., St. Paul 1, Minn.

Called "Model P-909," the cleaner is equipped with a universal type a.c. or d.c. 115-volt motor which is sealed against water damage and fitted with a separate cooling system for continuous operation. It generates an air flow of 74-cfm. and a vacuum water lift of 42-in. Dry tank capacity is 1¾ pecks; liquid capacity is 3¾ gallons. All bearings are precision ball-type, permanently sealed in lubricant.

New Heavy-Duty Cleaner for Iron and Steel

Oakite Products, Inc., manufacturers of specialized cleaning and related materials, has developed a new detergent, Oakite Composition No. 26, designed to remove extra-heavy soils from iron and steel in one operation, thus eliminating the need for separate precleaning and alkaline cleaning procedures.

Oakite Composition No. 26 combines the heavy-duty cleaning action of

Use NAZ-DAR Weatherproof

Silk Screen Enamel

MORE COVERAGE
GREATER DURABILITY

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INSIDE DRUM CLEANER

For both 30 and 50-gallon drums or for 50 and 110-gallons

Most compact and efficient drum cleaner made!

The necessity for thorough cleaning of insides of drums is obvious, and this latest inside drum cleaner does the job quickly and better than any other method. Mechanism ingeniously arranged to care for end cleaning as well as sides. Investigate this machine. Descriptive literature sent on request.

The Vol-U-Meter Co.
P. O. Box 54,
BUFFALO 16, N. Y.

both alkaline and solvent-type cleaners and also contains surface active agents, a combination for removing tenacious soils encountered in metal-processing. The material wets and penetrates heavy soils quickly, efficiently loosening them so that subsequent rinsing leaves work surfaces thoroughly clean.

Additional information concerning this new heavy-duty cleaner is supplied in a special Service Report, copies of which are available without charge to readers writing on company letterhead to Oakite Products, Inc., 132F Rector St., New York 6, N. Y.

CO^2 Powered Spray Gun

An improved model of the Becker self-contained spray gun has been developed by Sullivan-Becker Co., Kenosha, Wisc. Powered by low cost CO^2 cartridges, the gun is designed for portable industrial use. Called the Model 53, it needs no compressor, hose or electrical connections.

A feature of the gun is its adjustable, removable nozzle which permits it to spray paints from a fine mist to a stream. Each CO^2 cartridge will spray up to a container full (21-oz.) depending on the viscosity of the fluid used.

For industrial applications the gun is available with a special attachment that fits into the handle so the unit can be pressurized by a conventional air line for spraying solutions which will atomize at low pressure.

The spray head is cast aluminum, the container is heavy gauge steel, and the inserts are of brass and stainless steel.

New Mono-Column Demineralizer

A demineralizer which operates on the efficient and economical mono-column method is available. Cation and exceptionally strong anion exchangers are intimately mixed in a single unit tank through which the raw water is passed only once.

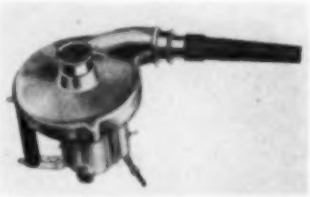
The unit is compact, requiring only 2-ft.x2-ft.x7-ft.6-in. floor space, connection of influent to a plant's water system, and effluent to those points where high purity water is required.

The M-100 demineralizer will produce up to 90-g.p.h. of high purity water automatically without the use of heat or steam power.

For further information, write Mr. E. H. Clohessy, general manager, Penfield Manufacturing Co., Inc., 19 High School Ave., Meriden, Conn.

New Portable Blower

A new heavy-duty industrial blower, designed for portability and powerful air delivery in industrial maintenance work, is announced by Premier Co., national cleaning equipment manufacturer in St. Paul, Minn.



Portable or stationary; weight, 16-lbs.

The Premier Model 150 blower, available with special tool kits for difficult cleaning jobs, has a heavy-duty, 1-hp., universal-type, a-c/d-c, 115-volt motor and produces an average maximum vacuum of 40.5-in. It will handle 220 cu. ft. of air per minute at a pressure of 28.6-in. Bearings

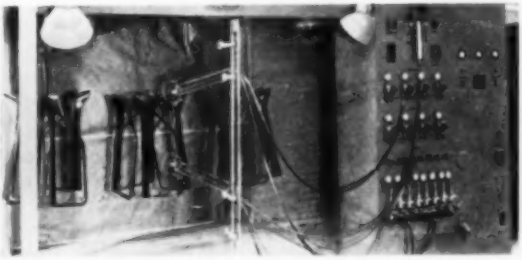
Get Better Baked Finishes in GEHNRICH Recirculating Ovens

Gehnrich Recirculating Ovens—truck, rack or conveyor types; gas, electric, oil or steam heated — are built to meet your specifications for output, quality, economy. What's your oven problem?

W. S. ROCKWELL COMPANY
2783 Eliot St., Fairfield, Conn.

Now You Can Buy!
ELECTROSTATIC SPRAY EQUIPMENT

No Lease! ***No Royalties!***



Shows IONIC Electrostatic Unit spraying chair legs as they travel through on overhead conveyor. Photographs and details sent on request.

COMPLETE FINISHING SYSTEMS DESIGNED AND INSTALLED

HOVEY SPRAY EQUIPMENT COMPANY

63rd & Vine Sts. **Philadelphia 39, Pa.**

Serving the East Exclusively

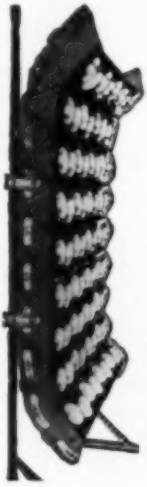
are precision ball-type, packed in lubricant; a 20-ft., three-wire, rubber covered cord with grounding terminal is furnished with the unit.

The manufacturer also recommends the unit as stationary dust disposal equipment for industrial and shop use where metal dust from grinders and polishing machines must be controlled.

For literature and price information, write Department KP, Premier Co., 755 Woodlawn Ave., St. Paul 1, Minn., and mention this publication.

Contour-Flex Infrared Oven

Wil-Son Mfg. Corp., announces an addition to its line of infrared ovens for large-area side heating applications.



These units are available in standard sections 32-in. and 48-in. long. The Patent-Flex design permits tight multiple section joints, with each section individually adjustable from the outside. Each lamp row has two complete panels of asbestos insulated, metal backed construction to keep the heat in the oven.

This new oven is designed for taking care of the larger installations, and is equally well suited for both conveyorized and batch type work. The contour of the oven can be changed while it is in actual operation; every lamp in the oven can be directed to the work.

For further information write Wil-Son Mfg. Corp., Dept. IF, Cloverport, Kentucky.

Cold Process Solder Fills Flaws in Metal

An improved plastic metal-base cold-process solder that can be used to fill dents, holes, cracks and various imperfections in castings, patterns, and all metal surfaces is now available.

Duro Solderweld No. 53, a metallic plastic in putty form can be applied cold, just as it comes from the can. The only tool necessary is a spatula or putty knife. It dries to metal hardness when exposed to the air. Drying time depends on the thickness of the coat—generally about 20 minutes at room temperature. When dry, it can be ground, filed or sanded down to a level feather edge. This solder will flex, and is particularly suited to applications where shock resistance is important.

It is packaged in cans from 6-oz. to 3-lbs. Samples are available by writing The Woodhill Chemical Co., 1391 E. 33rd St., Cleveland, Ohio.

Rubber to Metal Bonding Process

Manufacturers in aircraft and industrial fields to whom rubber to metal bonding of precision accuracy is of vital importance, should be interested in the process developed by the Stillman Rubber Co., 5811 Marilyn Ave., Culver City, Calif.

Known as Permadizing, the new technique offers designers a rubber to metal material whose dimensional tolerances can be held as closely as metal, as fine as a 5 micro-finish. The Permadizing process eliminates harmful flash and flaring of rubber and bonding agent on metal inserts, minimizes rejections and costly rework. It also successfully bonds aluminum to many varying compounds of rubber, synthetic rubber or silicone.

When E. J. Boyle, Inc., wanted a perfect finish for Its famous **AETNAWALL** *office partitions . . . the unchallenged choice was . . .*

Randolph
COLORED LACQUER

E. J. Boyle, Inc., a division of Aetna Steel Products Corporation, manufactures Aetnawall, considered the finest in prefabricated hollow metal walls. For this leading, long-established concern, Randolph produces a superior finish — lacquer available in a variety of distinctive colors. This finish provides a rich, attractive sheen that helps create the heavy demand for these partitions in modern offices. Its quick-drying features are essential to fast-moving production, and the handling of rush orders, large or small.

E. J. Boyle, Inc., is one among a large variety of firms that depend on Randolph for specially-formulated, highly suitable and serviceable surface coatings.

Consult Randolph to get a finish that makes *your product* look, wear — and sell — better!

RANDOLPH PRODUCTS CO.

DEPARTMENT B

CARLSTADT, N. J.

DOPES LACQUERS ENAMELS THINNERS

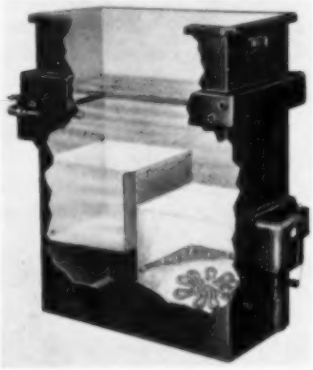
Strip-Off Coating; Masks

A fast drying, tough, strippable coating is offered by Chemical Development Corp., Danvers, Mass. Called CD Strip 100, it is supplied as a solvent solution and is easily applied by dipping, brushing or spraying. It is water insoluble and extremely strong, even in thin gauges.

The material may be used for protection of aluminum and other metals during drawing and general fabrication and for the general protection of glass, phenolic laminates and similar surfaces. It can be removed by stripping or peeling. It is bright red in color, therefore the operator can quickly determine what areas have been treated. It is useful for masking purposes . . . . and can be used as a peel-off coating for the interiors of spray booths. A special bulletin will be sent on request.

Compact Vapor Degreaser

A new compact vapor degreasing unit is offered by Phillips Mfg. Co., 3411 W. Touhy Ave., Chicago 45, Ill. The unit is capable of cleaning 200-lbs. of work per hour, either in baskets or as individual pieces.



Includes both vapor degreasing and rinsing.

The new unit, No. 100 CS, includes cool rinse, hot rinse and vapor degreasing because it has both a rinse and boiling sump along with a water jacketed vapor area. Distilled solvent is collected by means of a condensate return trough, passed through a water separator and returned to the rinse sump. The boiling sump is fed by overflow from the rinse sump. Heating is electrical.

As a solvent recovery still, the unit has a distillation rate of seven gallons per hour, based on a 30% contamination of solvent.

Hi-Solids Lacquer and Companion Sealer

Announcement is made of a lacquer containing over 32% solids that may be sprayed full bodied, hot or cold, without reduction. The coating film will not check; it flows out smooth and is resistant to water, alcohol and whatever makes scratches. It is tough, durable and light in color; is called No. 8800 Hi-Solids Lacquer.

A No. 1830 companion sealer is especially formulated for use with Hi-Solids Lacquer.

For further details on both products, write V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39.

Oil Removes Fingerprints

Froil is the name of an oil that removes fingerprints, prevents their formation and protects machined parts during operations. It is nontoxic, pleasant to use, completely stable and non-corrosive. It may be applied by wipe-on, dip or spray. Also it is said to be efficient as a rust preventive. This remover meets military specifications MIL-C-15074A, MIL-R-15074 (ships) and USAF 14156. It is available from Octagon Process Inc., 15 Bank St., Staten Island 1, N. Y.

Add beauty and sales appeal to your products with . . .

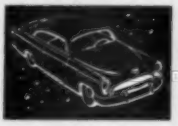
POLYCHROMATIC

Industrial Finishes

using REYNOLDS NON-LEAFING ALUMINUM PIGMENTS

REGULAR

The most iridescent polychromatic finish . . . in great demand for automobiles . . . translucent enamel or lacquer used as the color base.



HAMMERED

Achieves the effect of ball-peening . . . gives a multi-toned texture . . . conceals minor surface defects.

WRINKLED

For glare-free surfaces . . . produced during short baking operation . . . opaque enamel base has good defect-hiding properties

Reynolds technicians will be glad to work with you and your finishes supplier to achieve the right polychromatic finish for your product.

NOTE:

CHROME REPLACEMENT FINISHES

(with leafing aluminum pigment)

Metal parts are sprayed with a synthetic resin primer . . then with a slurry of aluminum paste. Tiny aluminum flakes rise to the surface and are baked into position. Parts are then sprayed with transparent color or clear synthetic lacquer and again baked. This gives a tough, attractive satin finish with good adhesion. It is resistant to salt spray (250 to 400 hours).

*U.S. PATENTS 2,309,377 AND 2,293,751. CAN. PATENT 472,685

For consistency in color and result, for constant high-quality and performance, order Reynolds Aluminum Pigments for your polychromatic industrial finishes . . . Regular, Hammered and Wrinkled.

Reynolds patented* non-leafing aluminum pigment remains evenly dispersed as the coating sets-up. The scattered aluminum flakes produce depth and iridescence to add beauty and sales appeal to your products.

Send for the free brochure, "Industrial Polychromatic Finishes." Reynolds Metals Company, 2533 S. Third St., Louisville 1, Kentucky.

"Mister Peepers" returns September 13th on NBC-TV.

REYNOLDS ALUMINUM

MODERN DESIGN HAS ALUMINUM FINISHES IN MIND

BOOKS
On Finishing Available

"MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) new $8.50

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Cash Must Accompany Order—Send for Descriptive Circular

INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

Agateen Black, New Product by Agate Lacquer Mfg. Co.

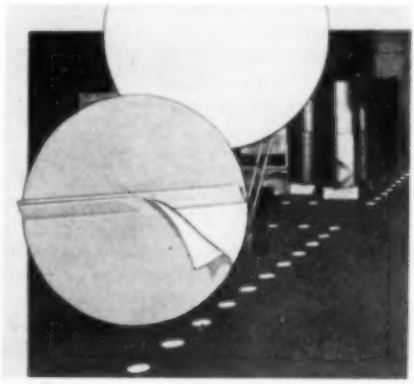
For over a quarter of a century Agate Lacquer Mfg. Co., Inc., 11-13 43rd Road, Long Island City, N. Y., has produced only clear coatings called Agateen. Customer demand has caused a change. Announcement is made that Agateen Black, a permanent ebony black with Agateen's well known adhesion, durability and mileage is now available.

Self-Adhesive Aisle Markers

Economy and simplicity of installation—plus extra safety advantages.

Self-Adhesive Aisle Markers manufactured by W. H. Brady Co., 727 W. Glendale Ave., Milwaukee 12, Wisc., are made of durable, colorful plastic, backed with a heavy duty, pressure-sensitive adhesive. They are stocked in four bright colors—yellow, red, green and white—sharp, vivid colors that command attention even in poorly lighted areas. They stick fast to any clean, dry floor without moistening.

These aisle markers are only .005-in. thick; they lie flush with the floor; the durable plastic surface of the



Close-up of face and back sides of markers.

NON-INJURIOUS ELECTRO NON-INFLAMMABLE

COLD STRIPPER

FASTEST in Action LOWEST in Price

WRITE FOR TESTING SAMPLE OR ORDER 5-GALLONS AT DRUM PRICE

Specify whether dip or brush type is desired

Allied Finishing Specialties Co.

2641 W. Grand Ave. • Chicago 12, Illinois

markers is highly resistant to abrasion; acids, oil, grease, salts, water and most common solvents have no affect on the markers.

Each Brady Aisle Marker is mounted on a 2-piece folded paper liner which protects the adhesive until used. Stock circular aisle markers are available in 2, 3, 4 and 5-in. diameters. Directional arrows in 2, 3, 4 and 5-in. sizes. Special sizes, colors and shapes will be made up to order.

Screen Process Enamel for Use on Plastics

Development of Logoquant Series AV-46, a new silk screening finish for cellulose acetate plastics was announced recently. AV-46 has iron-tight adhesion, extreme resistance to plasticizer migration, and is flexible beyond the requirements of any standard test. The new coating material will be available in a wide range of standard and matched pigmented and pigmented-metallic colors.

Samples of Logoquant Series AV-46 were submitted to Eastman Chemical Products, Inc., Kingsport, Tenn., sales representative for Tennessee Eastman Co.'s Tenite plastics. The company made evaluation tests in its laboratory on coated panels of Tenite I, which is one of the cellulose acetate plastics most widely used in the industry. The laboratory report indicated that on the representative Tenite I formulas and flows tested, "adhesion, elasticity, and resistance of the coating to softening by plasticizer migration in general, were considered excellent. The seven colors of AV-46 tested also had excellent light stability."

After drying coated Tenite I panels for 24 hours, the coating samples were tested at 100° F. and 80% rela-

FUNCTIONAL FINISHES ! !

If you require your coatings to accomplish some specific task—something beyond mere ornamental appearance or average longevity—

TRY US!

We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.

THE VARNISH PRODUCTS COMPANY
5206 Harvard Avenue **Cleveland, Ohio**

tive humidity for 72 hours without loss of coating adhesion. When tested for 400 hours in a fadeometer, the seven colors tested showed no fading. Elasticity tests indicated that "the coating on all pieces of sheeting showed excellent elasticity with no cracks when stretched" into a 4-inch hemisphere.

Requests for samples of Logoquant Series AV-46 in any standard or matched or pigmented-metallic color are to be addressed to Logo, Inc., 13799 South Avenue "O", Chicago 33, Illinois.

Corrosion Resistant Coatings

Lithcote Corp., 36 W. 44th St., New York 36, N.Y., has developed a new line of coatings, in addition to the standard baked phenolic type which has been used for many years in the chemical and process industries.

These coatings providing interior linings, have been service tested for resistance to corrosion and contamination in a wide variety of chemical products and exposures.

Linings are adaptable for use in tank cars, storage tanks and other processing equipment requiring protection from corrosion or contamination where product purity is essential.

Foam Spray for Chemical Fires

A spray-type foam maker, designed to blanket flames with air foam over a wide area all at one time, has been developed by Pyrene Manufacturing Co., 560 Belmont Ave., Newark 8, N. J., for overhead protection of medium sized petroleum and chemical hazards.

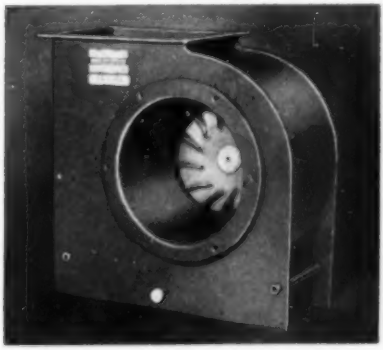
The foam maker, generating the fire fighting foam right at the hazard,

is equipped with a cone shaped spray head which discharges an even pattern. The device is for use in fixed systems, singly or in multiple, indoors or out.

Tested and accepted for general application by the Underwriters' Laboratories, the device is for protection of oil filled transformers, pump rooms, loading racks, drip pans, drain boards, sumps, process tanks and other hazards in petroleum and chemical storage, loading and production areas.

Corrosion Resistant Exhaust Ventilators

Corrosion resistant exhaust ventilators for use in industrial plants and laboratories are now available. These exhaust ventilators are fabricated from Agilide (unplasticized polyvinyl chloride), which offers high structural strength and outstanding chemical resistance to most corrosive vapors encountered in industrial operations, including nitrous gases.



These ventilators are of fully welded construction, and are produced in four different sizes, ranging in capacity from 250 to 1670-c.f.m.

For complete specifications, chemical resistance, and prices, write the American Agile Corp., P. O. Box 168, Bedford, Ohio.

ALL METALS GO FOR

SEA-LAC

Universal Clear Lacquer

Excellent adhesion to all types of metals is the big feature of our UNIVERSAL CLEAR LACQUER. Plus good build, gloss and flow. It can be air dried or force dried to mar-resistant hardness. It is clear, non-discoloring. Write for sample.

Duralac Chemical Corp.
84 LISTER AVE., NEWARK 5, N. J.

REPRINTS AVAILABLE

"How Much is A Gallon of Paint Worth," price 10 cents per copy.

"The Theory and Practice of Finishing Furniture" (Five Parts), price 20 cents per copy.

"Why Color Changes in Finished Furniture," price 10 cents per copy.

"Coating the Surfaces of Products by Dipping," price 10 cents per copy.

"Technique of Finishing Small Wood Turnings, etc., by Tumbling," price 10 cents per copy.

"Flow Coating as a Means of Paint Application," price 10 cents per copy.

"Stirring and Straining," price 10 cents per copy.

"A Method Engineer Analyzes Paint Selling," price 10 cents per copy.

"Preparing and Painting Metal Specialties", price 10 cents per copy.

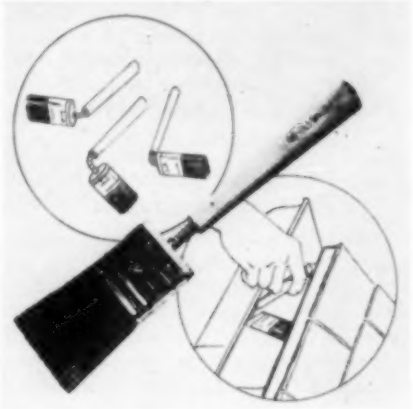
"Flock (What it is, its appearance, its uses both for utility and decoration)", price 10 cents per copy.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

Flexible Handle Paint Brush

A wrist action handle that permits the brush head to be angled in any direction is the principle of the Util-A-Brush. It is possible to paint those places that were always awkward to reach with conventional brushes. Recently introduced by Fern-Way Co., 11705 Detroit Ave., Cleveland 7, Ohio, this brush utilizes a strong flexible cable that joins the handle to the brush ferrule. This cable permits multiple-angle bending, yet it will stay put while brushing in the adjusted position, or if used as a straight-handle brush.



Stays put, as adjusted—straight or angled.

These brushes should prove useful in maintenance painting and for dry brushing, that is cleaning those hard to reach, inaccessible places.

Non-Corrosive Marking Ink

A non-etching, non-corrosive, non-smearing marking ink has been developed. It dries fast and has excellent adhesion to metals, plastics, glass, paper, rubber, silastic, fabric and painted surfaces. Stamp-Ink resists abrasion, heat, water, oils, naph-

RONCI SPEEDIP WHIRL ENAMELER

Made in Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines. All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

Prompt Deliveries

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

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thas, chlorinated solvents and many other solvents used in manufacturing, yet it can be quickly and completely removed from non-porous surfaces. It is made in six brilliant, high opacity colors.

For full information and color card, write Organic Products Co., P. O. Box 428, Irving, Texas, and ask for bulletin No. 30-B.

Strippable Coating For Moth-Balling

A newly developed, low cost strippable coating called Thermo-Cote D is announced by the Plastics Division, Ernst Bischoff Co., Inc., Ivoryton, Conn. It will prevent corrosion or abrasion damage to metal tools and parts during storage, handling and shipment.

The material is an ethylcellulose base coating which is applied by the hot dip process. Supplied in small blocks, it is melted in a thermostatically controlled tank and brought to a maximum temperature of 350° F. The parts are then dipped, withdrawn and allowed to cool. Normally they can be handled about two minutes after dipping.

Special features of the coating are that relatively thin films applied at lower temperatures have excellent stability and transparency. The melt is clear and transparent in the tank, and without fumes or odor.

Neoprene Liquid Lining

A neoprene based liquid lining (protective coating) called Gaco N-200-1 has been developed by Gates Engineering Co., P. O. Box 1711, Wilmington, Delaware.

This coating material provides a resiliency and toughness necessary to

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The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" for ease of handling. ALL BOND TACK CLOTH is **Spontaneous Combustion Proof, Lint-Free** and **Wax-Free.** Gives a sparkling speck-free Finish **every time.** Clean and sanitary. No waste.

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A Warranty of Satisfaction in Every Carton

shield equipment against the combined attacks of chemicals and abrasion.

Tanks, pumps, valves, pipe lines, fans, ducts, and processing equipment, regardless of their intricate shapes and irregular surfaces, may be readily lined with this compound. It may be applied by brush, spray or by dipping.

Platon Sanding Sealer

A new sanding sealer for use as a first coat on most common woods that are to be finished with "Platon", is announced by Minnesota Platon Corp., Pipestone, Minn.

In addition to sealing the wood, this new Platon Sanding Sealer also acts as a filler. It is claimed that the open cells of the wood are filled so that after the wood is resanded lightly it has a uniformly dense surface. Succeeding applications of Platon then build up more rapidly to produce a better finish with fewer coats.

Platon Sanding Sealer is recommended for use on all common woods, plywood, etc., except such open grain woods as oak and chestnut. On these woods regular Platon filler should be used.

For complete information on Platon Sanding Sealer and other Platon wood finish products, write to Minnesota Platon Corp., Pipestone, Minn.

Anti-Rust Paint in Color

Three new colors have been added to the Paint Corporation of America's anti-rust paint line. Formerly available only in black, clear and aluminum, it can now be had in light gray, oxide red and chrome green.

Made with a special blend of vege-

table oils, including soya bean and processed Menhaden, plus rust inhibiting chromates, these paints are reputed to stop rust for years in one application. The manufacturer states that they can be painted right over rusty surfaces without wire brushing, scraping or sandblasting and without the use of a prime coat of any kind. The coating of paint absorbs surface rust, penetrates to the clean metal beneath and seals it against further rust or corrosion. The coating resists moisture, mild chemicals and temperature changes.

Write for Bulletin L-7287, Paint Corporation of America, Fidelity Building, Cleveland 14, Ohio.

Safety Cleaning Solvents

A new series of safety solvents for cleaning greasy, oily, dirty machine parts has been developed by Harco Chemical Co., Cranford, N. J.

Developed primarily to replace toxic carbon tetrachloride, these solvents present a wide selection with flash points, ranging from 140° F. to 280° F.

Any of the series is recommended for degreasing and cleaning electrical equipment and all metal parts. The solvent dries fast, leaving no deposit. The firm offers 5-gallon drums for trial at the regular drum price.

For technical bulletins giving complete specifications write Harco Chemical Co., 338 North Ave. E., Cranford, N. J.

Little Paint Mixer

Ever want to power mix the paint in a container as small as a gallon, quart or even pint, without the possibility of splashing? A little mixing tool which will fit into the chuck of a small hand or power drill (¼-in. in diameter) is offered by Conn & Co., 11 S. Marion St., Warren, Penna. It is self-cleaning in any liquid solvent.

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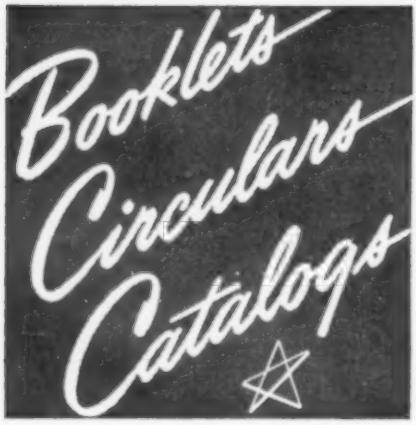


New Fan Engineering Manual

A complete, 64-page, illustrated guide to modern industrial ventilation and air movement is offered free by Acrovent Fan Co., Inc., 720 E. Ash St., Piqua, Ohio. Engineering, installation and operating data for all standard and special-duty fan applications are included. Ask for Catalog No. 20.

Heavy Duty Floor Cleaner

Literature covering the Premier Model P-901 heavy duty floor cleaner has been issued by Premier Co., manufacturer of industrial cleaning equipment.

The literature illustrates the cleaning unit, lists all features and dimensions and describes standard and optional cleaning tools available with the equipment. Write Premier Co., Dept. KP, 755 Woodlawn Ave., St. Paul 1, Minn.

New Pocket Catalog Of Handling Equipment

A new comprehensive line of equipment for the "floor level" handling of goods and materials is presented in the Barrett Junior Catalog, No. 535, just released.

This 100-page eleventh edition contains information, illustrations and specifications on fork trucks, high lift electric trucks, pallet trucks, industrial tractors, electric and hand lift trucks, steelleg skids, semi-live skids and lifters, portable and industrial elevators, portable cranes, stacking frames, steel storage racks, lifting and die tables, hand trucks, and handling specialties.

Junior Catalog No. 535 will be mailed free upon request to the Barrett-Cravens Co., 4609 S. Western Blvd., Chicago 9, Illinois.

Aluminum Fabricating Brochure

More manufacturers are increasing their production by purchasing fabricated parts and sub-assemblies. A new illustrated 24-page, 8½ x 11-in. booklet, Catalog of Facilities, published by Reynolds Fabricating Service, 2001 S. Ninth St., Louisville 1, Ky., shows and describes various fabricating equipment and methods. This is a branch of the Reynolds Metals Co. A free copy will be mailed on request.

Explosion-Proof Lighting Fixture Bulletin

A new 4-page bulletin, SEC-K, describing components, performance data and methods of installing or relamping for any of its new EV series explosion-proof and weather-resistant lighting fixtures, has been issued by Crouse-Hinds Co., Wolf and Seventh North Sts., Syracuse 10, N. Y.

The new series has been designed for use at locations made hazardous by concentrations of ethyl ether vapors or gasoline, petroleum, naphtha, alcohols, acetone, lacquer solvent vapors and natural gas.

Aluminum in Appliance Making Free Booklet

The trend toward use of aluminum in appliance manufacturing, why more and more appliance manufacturers prefer fabricated aluminum parts, and why Reynolds Metals is engaged in making such parts, is told in an attractive, 16-page booklet just published by Reynolds Aluminum Fabricating Service, 2001 S. Ninth St., Louisville 1, Ky. Copies are available without charge.

The booklet describes and pictures the making of some of the many aluminum parts purchased from Reynolds by the nation's leading manufacturers of refrigerators. These parts include evaporators, drip trays, door trays, butter keepers, shelves, crisper frame assemblies, meat and vegetable trays, and others.

Caustic Soda Manual

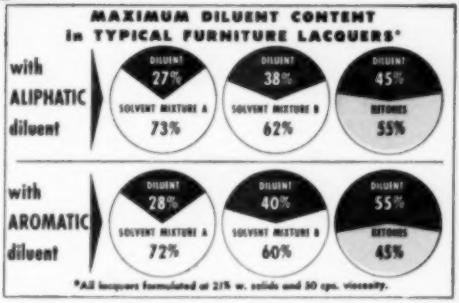
A 64-page illustrated manual, "Caustic Soda," compiled by the technical staffs of the Columbia-Southern Chemical Corp., wholly owned subsidiary of Pittsburgh Plate Glass Co., is now ready for distribution.

Chapters are devoted to caustic soda production and uses. A technical data section includes valuable tables and charts, outlines the properties of caustic soda, provides complete data on methods of analysis and mixing caustic soda solutions.

For a copy, write on your letterhead to Columbia-Southern Chemical Corp., 420 Fort Duquesne Blvd., Pittsburgh 22, Penn.

KETONES

give you a better break with any lacquer diluent . . . and here's why!



WHETHER YOU USE an aliphatic or aromatic diluent, *you can use more diluent* when the active solvent in your lacquer formulations is a ketone.

A glance at the chart will show how ketones give you a better break. Here are six typical furniture-type lacquers with the same solids content and the same viscosity. They differ only in the active solvent employed. Three contain an aliphatic diluent. Three contain an aromatic. Take a look at the diluent content!

The ketone-aliphatic combination holds 45% diluent, and the ketone-aromatic—55% diluent. *The ketone-based lacquers show the highest diluent content with both types of diluent.*

There are other important advantages to be had with ketones, too. You can get higher solids concentration in a practical spraying viscosity range. Or you may use greater proportions of the high viscosity nitrocottons to obtain lacquers with improved toughness and durability. The advantages to be gained from using Shell ketones are summarized in two new pamphlets, *This is MIBK* and *This is MEK*. Ask your Shell Chemical representative for your copies.

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Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • St. Louis
In Canada: Chemical Division, Shell Oil Company of Canada, Ltd. • Toronto • Montreal • Vancouver

Alkalume Process Brochure

A new 12-page brochure completely describing its Alkalume Process, is announced by the Northwest Chemical Co., 9310 Roselawn Ave., Detroit 4, Mich.

Alkalume is a revolutionary process for preparing aluminum, magnesium and hard-to-clean steels for welding, and other finishing operations.

Alkalume cleans without harming the metal, dissolves and removes the surface oxides, reduces the surface resistance to a value of 0 to 10 microhms, and preserves for long periods of time a surface resistance between 10 to 20 microhms.

Safety Films Offered

The foreman's key position in the plant safety program is the theme of two safety films released by the National Safety Council.

"Pick Your Safety Target," an all-color cartoon film based on actual accident-reduction plans within industry, features a foreman beset with an accident-ridden department. The film sets forth a three-step plan for detecting accident causes and taking corrective action.

For additional information and prices, write the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Stamping Manufacturers' Blue Book

The 60-page, 8½ x 11-in. 1953 edition of the Pressed Metal Institute's Blue Book of stamping manufacturers has been released. This directory lists the facilities and services of all member companies, and also contains a statement of policy to customers which has been subscribed to by all members of the Institute.

Copies of the Blue Book are available to all members and customers of the industry, by writing to the Pressed Metal Institute, 2860 E. 130th St., Cleveland 20, Ohio, on your company letterhead.

Control Instrument Catalog

A new illustrated catalog of control instruments for furnaces, ovens, dryers and kilns, has ben published by The Bristol Co.

The catalog, No. P1255, features electronic dynamaster potentiometer and millivolmeter type pyrometer controllers, recorders and indicators. A wide variety of electric, air-operated and electronic control instruments for use with fuel fired and electric heating equipment of all types listed. Complete engineering specifications and prices are given. In addition to numerous photographs, the catalog is liberally illustrated with diagrams of the various control arrangements and dimension sketches.

Copies are available on request from The Bristol Co., Waterbury 20, Conn.

How to Handle Barrels Better

"The Logistics of Barrels," is an illustrated 8-page booklet offered by the Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 3, Ohio. It reveals cost-cutting methods for fast, effortless handling of barrels and barrel "shapes" by power industrial trucks.

This free booklet tells you how any cylindrical-shaped container — standard wooden or steel barrels, drums, rolls of paper, linoleum or roofing, large spools of cable, car wheels—can be assembled on pallets or skids for effective handling. More than two dozen photos show various methods of handling by fork and platform trucks alone or with the addition of many special attachments designed to increase the versatility of this equipment.

Safety Manual Free

"Working Together for Safety" is the title of the National Safety Council's new employee rules manual. The handy 32-page booklet (4x7-in., two colors) contains instructions in safe work habits applicable to employees in most plants.

The practical experiences of workers, supervisors and safety specialists have established the safe practices covered, beginning with a list of general safety regulations and continuing with special sections on machine operation, hand tools, power tools, protective clothing, fire prevention, materials handling and many other related topics.

For a free sample copy and prices for quantities, write the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Strand Rotary Tool Catalog

The Franklin Balmar Corp., N. A. Strand Division, Woodberry, Baltimore 11, Md., has issued a new enlarged catalog of Rotary Tools for use with its line of Strand flexible shaft machines and the Diskette portable electric tool.

The 12-page illustrated booklet lists all Strand rotary tools. Copies may be obtained from distributors of Strand equipment, or by writing the manufacturer.

Industrial Lighting Spec's Book

Publication of the new completely-revised 1953 edition of the RIM Standards Specification book is announced by the RIM Standards Institute, 326 W. Madison St., Chicago 6. The most recent additions and revisions featured in this edition, recommended by the RIM Technical Committee and officially ratified by the RIM membership, cover: 1) Three officially-approved new specifications for semi-direct industrial fluorescent lighting units. 2) Important revisions and clarifications of existing specifications, including new tables of typical coefficients of utilization and light distribution curves.

PAINT EXECUTIVE WITH HIS FINGER ON A "HOT JOB"

Take most any custom finishing problem at Ferbert-Schorndorfer . . . for instance, this automotive heater . . . you'll find Carl Weber has his finger on it. Thousands of similar problems have passed over Carl's desk in his 31 years at F-S. He's the "inside" man whose telephone voice you often hear, but whose face you seldom see.

Literally, Carl's 31-year service has been in the employ of F-S customers . . . for it is their finishing needs to which he is sensitive; their problems on which he so efficiently co-ordinates service, research and production.

Ferbert-Schorndorfer is a closely-knit team guided by experienced executives and specialists like Carl Weber. That is why most users of F-S finishes have been steady customers from 10 to 30 years.

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Industrial FINISHING Editorial

Someone Looking Saved A Company $1,000,000

You wouldn't usually associate kibitzing with the steel industry; but, according to an article in Steelways, official publication of American Iron and Steel Institute, steelmen are the first to admit its importance.

They explain that *the development of new markets for steel requires their knowing as much about customers' products and manufacturing processes as the customers do.* Playing the role of kibitzer like this has often meant the creation of new products and the improvement of old ones.

There's the case of the kibitzing steelman who revolutionized the bottle cap and saved a manufacturer about $1,000,000 a year. He simply noticed what he believed was an unnecessary duplication of manufacturing effort and his company found a way to cut the process in half. Steel company files are full of eye-opening examples of this kind.

So, let's not be too strict about barring responsible individuals from our factories. Someone may come along and tell us how to produce certain results easier, safer, in less time and at less cost.

Inter-Department Competition

The spirit of friendly competition between different departments in a plant is usually a desirable condition. It helps to encourage a keen interest on the part of workers and often it results in real savings in manufacturing costs through increased efficiency, a reduction in absenteeism, fewer accidents, and improved methods by way of suggestion boxes located in all departments. It is a spirit that should be encouraged by management.

However, this competitive spirit must remain on a friendly, cooperative and constructive basis. Otherwise it may deteriorate into irritation, resentment and perhaps jealousy among the departments. Then cooperation ceases to exist. Each group sets out to promote its own selfish interests, to outdo the closest competitive section by whatever means, good or bad, that circumstances present. This can result in excessive rejects, a loss in production and increased cost.

All departments should be impressed with the fact that in any kind of competition, no one group can expect to always win all of the top honors. It will take some tactfulness on the part of management to keep everything clean and on a friendly basis.

Enclose Space Between Sprayer and Oven

Did you know that for a nominal cost you can enclose the space between the spray booth and the bake oven? This space and the interval of time that elapses while wet coated parts move through it, is needed to allow time for the wet coat to flow out and flash dry before the coated parts enter the bake oven.

The wet coat is especially vulnerable to dust and flying particles in this

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Write for 5 Gallon Working Sample at Drum Price

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WOOD BLEACH

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★ REQUIRES NO NEUTRALIZATION
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ECONOMICAL — CONTROLLABLE — DEPENDABLE

Gallon Unit makes two gallons of solution. Application by spray or sponge. Wood ready to finish in less than one hour. Delivered prices quoted on request.

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critical area. An enclosure at this area will also prevent employees and visitors from dodging under or between freshly coated parts as they move along on the conveyor.

Naturally, the tunnel must be large enough to accommodate whatever products travel through it by conveyor. Constructed of interlocking sheet metal panels, it can be erected so it is entirely independent of either the spray booth or the oven; that is, it doesn't necessarily need to be attached to the spray booth or the oven. If the spray booth is pressurized, sufficient air escaping through the conveyor opening will pass over the narrow space between the wall of the booth and the entrance of the tunnel to carry off any solvent fumes. Usually no exhaust flue is required in the tunnel.

There is little point in pressurizing the spray booth or spray room and then allowing the wet coated parts to pass through an area of open shop atmosphere on their way to the oven.

Products Are Painted, Why Not the Plant

There is an old saying, "the shoemaker wears the worst shoes". I am wondering if the principle of this old saying could not be applied to some industrial plants where so much em-

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phasis is placed on modern product painting and finishing. Some plants have excellent equipment—paint circulating system, fire proof paint storage, quality control laboratory, trained inspectors and experienced finishing supervisors. All of this, and all of these peoples' attention is centered on painting the product. That is how it should be for an efficient and economical operation.

But what about keeping the plant buildings and equipment painted—so-called maintenance painting? A definite painting schedule should be established, based on location of the plant, type of products manufactured, operations producing corrosive elements and any other contributing factors. Both an inside and outside paint schedule should be set up.

Once established, these painting schedules should be rigidly observed and enforced. A room, an enclosure or an entire plant interior or exterior may not appear to need painting, but will the old paint job survive for another six months or a year? Sometimes it is overlooked in the rush of things. A painting schedule will eliminate this and furthermore it does not leave the matter of painting up to any one or two individuals whose judgment may or may not be conducive to good maintenance.

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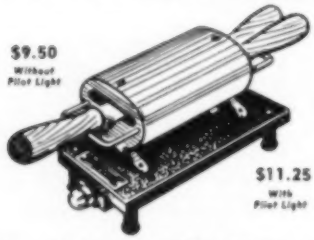

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Film Thickness for Adequate Protection

★ It is a well known fact that adequate film thickness is necessary to get the most protection from a coating on any iron or steel surface. A coating that is too thin often leads to early failure by rusting, blistering, or peeling.

Sometimes it is forgotten that the thin spots in the coating determine its durability and will cause early failure, even though most of the area has adequate film thickness. An object may have a coating 2 mils. thick over most of its surface, while the

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

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areas near corners, crevices, and holes (the very areas where moisture collects) will have only 0.4 to 0.8 mil. of coating. Result: rapid failure after service and exposure.

In one recent test, a coating 0.8 mil. thick failed in the salt spray cabinet in 72 hours. When the film thickness was raised to 2 mils, the coating was in good shape after 300 hours in the cabinet. Such behavior is not unusual.

Better protection can be achieved, of course, by proper cleaning of the metal, by using a phosphate treatment on the metal before painting, by the use of proper primers, and by using multiple coat systems. Often, however, cost considerations or the inflexibility of the production layout allows only a one coat spray operation. In this case, a hot spray setup or electrostatic spraying will help to give a heavier film and more uniform coverage. If it is feasible a thin dip coat, followed by a flash dry before the spray coat, may give good results.

As its film thickness is increased a coating becomes less flexible, and care must be taken to see that it does not become so brittle that it chips easily. Most industrial coatings are tough and flexible enough that a reasonable increase in film thickness will not markedly affect their flexibility.—*E. V. Goldstein.*

Sill Represents Carbomatic

Sill Industries, sales representatives and distributors, Maplewood, N.J., were appointed early in July by the Carbomatic Corp., Freeport, N. Y., to handle its entire line of gas-fired heating equipment.

As a result of this appointment, Sill Industries adds a line of gas processing heaters to the line of electric radiant heating panels which Sill has been marketing for industrial processing operations over a period of some five years. The principal equipment to be featured in the coming months are the Carbomatic Una-Ray and the Carbomatic Pyro-Jet units.

K. C. Woodrow Joins the Newcomb-Detroit Co.

The addition to its Executive Staff of Kenneth C. Woodrow is announced by Newcomb-Detroit Co., manufacturer of industrial equipment.

Mr. Woodrow was previously associated with another company in Detroit for 13 years, the greater part of which was spent as Assistant Manager of the Industrial Equipment Division. He is a graduate of Wayne University with a Bachelor of Science degree in Chemical Engineering and a member of the Detroit Chapter of S.A.E.

Mr. Woodrow's appointment as Assistant General Manager will complete the Engineering and Executive Staff of the Newcomb-Detroit Co.

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The More Effective
SPRAY-BOOTH
WATER-TREATMENT
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All paint restored to original consistency without opening the can.
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128 E. 10th St., St. Paul 1, Minn.

Permacel Tape New Name for Industrial Tape

Industrial Tape Corporation, New Brunswick, N. J., manufacturers of Permacel and Texcel pressure sensitive tapes, has changed its corporate name, effective immediately, to Permacel Tape Corporation, according to an announcement by Edwin J. Fitzpatrick, president.

Reason for the action, Mr. Fitzpatrick explained, was to concentrate increasing promotional effort on fewer brand and corporate titles.

"Both sales and promotional efforts of Permacel branded products," Mr. Fitzpatrick said, "have been increasing at a rapid rate and the change of name is more in keeping with company progress.

"To tie in more closely with increased advertising and promotional efforts that has resulted from substantially increased Permacel sales, it was considered advantageous to choose a name more directly identifiable with our products. We believe the new name, Permacel Tape Corporation, will much more readily identify itself with our Permacel advertising and the basic industrial products which it features under the Permacel brand.

"Permacel Tape Corporation is a change in name only. Our organization will continue to manufacture top quality industrial tapes under the long-accepted 'Permacel' brand as well as the familiar 'Texcel' Cellophane Tapes and 'Bondex' Hot Iron Tapes, just as we have in the past."

J. A. Sanches, Gen'l Sales Mgr. For Bede Products, Inc.

Joseph A. Sanches has been appointed General Sales Manager of Bede Products, Inc., 1110 Brookpark Road, Cleveland, Ohio. For the past two years Mr. Sanches has been Bede's Eastern District Sales Manager, with offices in New York City, which were recently closed.

A former resident of New York, Sanches brings with him an outstanding record of accomplishment in the product finishing field. The author of several technical trade journal articles, he has acted as consultant to leaders in the finishing industry. He was plant manager for Epiphone, Inc., world's largest manufacturer of stringed instruments, and for the Century Desk Co. Sanches will devote his promotional efforts to the revolutionary new Bede Paint Heater and the Airless Spray Painting System.

If you think you can't afford a paint circulating system, *Here's News*

● Ever say, "Our finishing operation just isn't big enough" . . . or "We can't justify a complicated, highly engineered paint spray system"?

The answer to problems like these lies in the basic simplicity of the new low-cost paint circulating systems perfected by Graco. First . . . Graco air-operated Paintmaster paint pumps work directly from original containers . . . 55 gallon drums or 5 gallon pails. *Drums do not carry pressure.* No messy, costly transferring. Paintmasters can supply up to 8 spray guns, in booths hundreds of feet from your supply room. The paint is continuously mixed by a separate air-driven agitator.

Installation costs are kept low by using economical, easily bent tubing to supply spray booths. Graco engineers can develop the best system for your particular operation. The famous Graco two-pump-per-color system (illustrated here) includes one Paintmaster to supply the system and one to prepare the next drum for simple, instantaneous changeover.

Graco low-cost circulating systems are handling as many as 48 colors! Let us show you what we can do for you. Write us today, and ask for Paintmaster Circulating System Literature.

GRACO

Paintmaster

GRAY COMPANY, INC.
83 Graco Square
MINNEAPOLIS 13, MINNESOTA

Regional Offices:
New York, Philadelphia, Detroit, Atlanta, Chicago, San Francisco

Random Comment on the Industrial Scene

(Continued from page 7)

Tec (a liquid) is equivalent to 0.2-mg. of water. This liquid is added, drop by drop to the liquid being tested until it changes from colorless to a greenish-blue.

This process will not work with glycerin, acetone, ethylene or propylene gycols, methyl, ethyl or isopropyl alcohols.

* * *

Changing Signs in industrial plants is made easy. A horizontal bar assembly has been developed on which slotted copy letters may be mounted.

The device is composed of a series of 24-in. mounting bars which can be applied to any flat surface. An aligning tool assures proper spacing. It will accommodate letters 4-in. to 8-in. and larger in height.

* * *

Wood Press has been developed by Bartrev, Ltd., a British firm which converts wood and wood waste into high quality all-wood panels. It is a continuous operation. The 200-ton press is 131-ft. long, and is now in operation just out of London.

William J. Fishbein, British industrialist, headed a team of nearly 200 engineers, chemists and physicists who worked on this press for 14 years.

Plans are being made to install these presses in American plants. It is said to represent an advancement in the wood industry comparable to that in paper making, the production of plate glass, strip steel and aluminum.

* * *

Colored Electric Lamps. General Electric Co. has developed six 150-watt electric lamps which have permanent color filters baked on their five-inch faces. Four of these lamps produce basic colors, red, green, yellow and blue, and the other two produce blue-white and pink tints. They may be mixed or diluted with white light to produce virtually any color in the rainbow.

These lamps may be used in display lighting or to provide either a warm or cool atmosphere in restaurants, lounges, offices and reception rooms.

H. W. Locker, Chief Engineer for Newcomb-Detroit Co.

The Newcomb-Detroit Co., manufacturer of industrial equipment, announces the addition to its staff of Mr. Howard W. Locker. His duties as Chief Engineer will entail the coordinating of all engineering activities.

Mr. Locker joins the Newcomb-Detroit Co. after connections with other companies in a similar line of business. He graduated from the University of Michigan with a Bachelor of Science degree in Mechanical Engineering.

The addition of Mr. Locker to its staff will enable the Newcomb-Detroit Co. to increase engineering service facilities in accord with continuing growth.

P.P.G. Co.'s Brush Division Mechanizes Its Production Flow

The centuries old art of brushmaking, which has changed but little through the history of civilization, has been rejuvenated with the completion of a streamlining modernization program at the Brush Division of the Pittsburgh Plate Glass Co., one of the large makers of paint and varnish brushes.

Under the guidance of E. D. Peck, vice president in charge of Pittsburgh's Paint and Brush Division, the company's brushmaking facilities have been revised from top to bottom. The undertaking represents the first complete modernization of an existing large paint and varnish brush manufacturing plant and has resulted in straight line flow of manufacture being concentrated in an existing 4-story building which ordinarily would have been possible only by constructing a new one-story building.

The multi-building Pittsburgh brush operation succeeded in achieving one-building, one-level manufacturing methods by the use of conveyors and gravity chutes of materials as well as provisions for mobility of assembly line equipment to allow for quick changes in production scheduling. Efficient layout and planning of all manufacturing operations resulted in a minimum outlay for new equipment although equipment innovations have been incorporated in the revitalized operation.

As a result of the mechanized flow of materials and manufacture, the Pittsburgh Plate Brush Division has been able to reduce the number of units in process of manufacture approximately 70% and at the same time increase production capacity. Flow of materials in manufacturing the average wall brush has been reduced from 5410-ft. to 600-ft.

New Appointments by Pacific Paint and Varnish

The appointment of Arthur H. Darling as manager of its metal decorating department, and Edgar E. Malin as district sales manager of its southern territory, was recently announced by W. T. Butner, vice president and general manager of Pacific Paint and Varnish Co., Berkeley, California.

Edgar E. Malin and Arthur H. Darling

Mr. Darling, with many years of experience in the lithographic coatings field, will render service and technical assistance to customers who require protective and decorative coatings for the metal container and closure industry. The company has an excellent laboratory organization, as well as modern production facilities to adequately supply this type of coating.

Mr. Malin will serve the rapidly expanding southern territory, which includes Southern California and Arizona, and will build an aggressive sales force based on technical knowledge and service to customers. Mr. Malin has had 15 years' experience in the industrial fininshing field, including aircraft, automotive and general industrial.

These two appointments are in line with Pacific's policy of expansion covering every phase of the protective coatings field, according to Mr. Butner. During the last five years, Pacific has increased its paint production facilities threefold, plus erection of one of the most modern synthetic resin plants on the Pacific Coast.

Other personnel at Pacific includes H. Lawton, district sales manager and export sales manager; W. F. Rhoads, technical director; K. H. Johnson, paint production manager; L. E. Thompson, purchasing agent; G. J. Grieve, manager of transportation sales.

TOMORROW'S Products Tested TODAY

A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

SOUTH FLORIDA TEST SERVICE
EST. 1931
4201 N. W. 7th St. Miami 34, Fla.

PEARL ESSENCE

"Astralucine Brand"
Produces a high luster
on a variety of finishes

Write for your free copy of our informative Technical Bulletin

"Pearl Essence Finishes"
—what they are and how to use them.

Argenta Products Co.
EASTPORT, MAINE

SOLVENTS RECOVERED BY
THE LOFGREN PROCESS

We RECOVER YOUR
SOLVENTS & THINNERS

From Wash Thinners - Spoilt Lacquers - Degreasing Machine Sludge, etc.

Each customer's shipment, whether one drum or a carload, receives PROPER AND SEPARATE TREATMENT. Write to:

SOLVENTS RECOVERY SERVICE, INC.
101 Central Ave., Westfield, N. J.

OR

HAMMOND SOLVENTS RECOVERY SERVICE
241 Brunswick St., Hammond, Ind.

Al D. Crowley of Ferro and Arco Dead at 55

Al D. Crowley, for many years Eastern Representative of Ferro Enamel, and more recently Arco, passed away at his home in Union, N. J. last June, after a brief illness. Mr. Crowley, a graduate chemical engineer of Dayton College, was very well-known in the field of organic coatings.

Prior to joining the Ferro Enamel Corp., he was Sales Manager of The H. V. Walker Co. of Elizabeth, N. J. He had been a member of the Paint, Oil, Varnish & Lacquer Mfr's. Ass'n. during the past 25 years, and was a regular attendant at the annual conventions.

He is survived by his widow, a son and daughter who reside at Union, N. J., and a brother, J. L. Crowley, who is associated with a firm in Pittsburgh. Al will be missed by his many friends in the industry.

N.Y.U. Offers Fall Term Courses in Finishing

Two surface technology courses for those working in the field of finishes will be offered during the fall term at New York University's Division of General Education.

Fundamentals of Paint, Varnish and Lacquer Technology will have class sessions from 8:10 p.m. on Wednesdays, September 23 to January 20.

A seminar on new developments in organic finishes will be given from 8:10 to 9:55 p.m. on Tuesdays, September 22 to January 19.

Further information on these courses may be obtained from Prof. Sidney G. Roth, N.Y.U. Division of General Education, 3 Washington Square North, New York, N.Y.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

GENERAL FURNITURE SUPERINTENDENT AVAILABLE.

Long experience handling entire plant from yard to shipping, practically all types of furniture. Personally know the operations in each department, including finishing, handling all kinds of lumber, labor and machines. Address IF-142, care Industrial Finishing.

POSITION WANTED

As Industrial Salesman or Sales Service. Capable of engineering and servicing all types of metal treatment and finishing. Well versed on application equipment, methods and types of finishes. Five years paint factory production, five years industrial laboratory, ten years sales service. 41 years old. Very well qualified for above positions. Address IF-140, care Industrial Finishing.

PLATING SUPERVISOR NEEDED

For decorative trim manufacturer located in Ohio. Submit experience in detail. Replies held confidential. Address IF-141, care Industrial Finishing.

SALESMAN WANTED.

Large Midwest Industrial Finishes Manufacturer desires experienced salesman for established territory in Central Illinois and Eastern Iowa. All replies confidential. Address IF-138, care Industrial Finishing.

FINISHING ROOM FOREMAN.

Chicago manufacturer of medium-priced living room tables is looking for a working foreman. He must be a man who has had many years of handling all responsibilities in a finishing room. Employ about 25 in finishing department. Offering good salary arrangement. Address IF-137, care Industrial Finishing.

SALESMAN—INDUSTRIAL FINISHES.

Experience in selling and servicing Industrial Finishes, wood and metal, important. Memphis, Tennessee and surrounding territories available. We have well established lines to offer with efficient and prompt laboratory assistance. Appointment for interview may be obtained by writing or phoning the CHARLES R. LONG, JR., CO., Louisville 10, Kentucky, CYpress 4411.

WANTED.

Traveling Sales Manager and salesmen experienced in the industrial finishing field in both wood and metal. Imperative that anyone answering this ad must have established accounts.

ADVANCE PAINT CO.
601 Kentucky Ave.
Indianapolis 7, Indiana

SALESMAN WANTED

We are opening a Chicago office for the sale of Pearl Essence and other specialty pigments. We desire a man with lacquer and plastics experience to establish and run this office and manage its sales program in conjunction with the New York office. Salary plus commission.

THE MEARL CORPORATION

153 Waverly Place **New York 14, N. Y.**

SALESMEN WANTED.

Experienced salesmen selling lacquer and synthetic finishes. Good opportunity, open territory, good laboratory cooperation. Factory in Newark area. Apply in detail. Address IF-139, care Industrial Finishing.

ALKALI SALES SUPERVISOR.

District sales supervisor needed at once to represent nationally-known metal cleaning company. Territory Northeastern part of the United States. The person we are seeking must have had plating, alkali cleaning, or phosphate coating experience. Excellent starting salary and incentive plan. Interviews will be granted in the near future. Please send resume of experience to IF-132, care Industrial Finishing.

SALESMEN—INDUSTRIAL FINISHES

Minnesota
Wisconsin
Iowa

Must be experienced, young and aggressive. FROST PAINT & OIL CORP., Minneapolis 13, Minn.

FOR SALE.

Japanning Business
Excellent Equipment
Accounts—Real Opportunity
EDWARD SCHULTZ AND COMPANY
Union Commerce Bldg., Cleveland 14, Ohio

DRUM CLEANING CHAIN

THE VOL-U-METER COMPANY
Buffalo 16, N. Y.

FOR SALE.

Complete Despatch Paint Finishing System, less than five (5) years old, at 20% of original cost. Consisting of degreasing equipment, dry-off oven, spray booths and bake oven; also air replacement system. Complete system overhead conveyorized. Can be seen in operation. Available February 1, 1954. Detailed description will be mailed on request. JORDAN REFRIGERATOR COMPANY, 58th & Grays Ave., Philadelphia 43, Penna.

SOLVENT CLEANING SERVICE.

Dirty lacquer solvent can be shipped to us for distillation and returned to you clean and ready for use. Within 200 mile radius of Louisville a substantial economy can be realized. Cost runs from 14c to 19c per gallon. KENTUCKY COLOR & CHEMICAL CO., 600 N. 34th St., Louisville 12, Ky.

WANTED TO BUY.

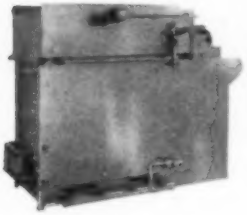
Will buy your dirty Thinners and Solvents. Send samples or letters giving approximate contents and solids. Address THE JOHANN CO., 8547 S. Ashland Ave., Chicago, Ill.

FORD CUPS

THE VOL-U-METER COMPANY
Buffalo 16, N. Y.

ETCHED METAL PLATES
STEEL STAMPS - BRASS STENCILS
RUBBER STAMPS
AND ALL OTHER MARKING PRODUCTS
ST. PAUL STAMP WORKS INC.
Oldest in the Northwest Established 1870
67 E. FIFTH ST. ST. PAUL 1, MINN.

BLAKESLEE degreasers use less solvent



Solvent savings are assured when Blakeslee Solvent Vapor Degreasers are installed. Dual-Vapor Control is only one of Blakeslee's original features designed to give you lower operating costs than other degreasers. With continued solvent savings, Blakeslee degreasers soon pay for themselves.

G. S. BLAKESLEE & CO.

Established since 1880. Manufacturers of solvent vapor degreasers—metal parts washers—Blacosolv degreasing solvent.*

Write today for full information. Chicago: 1844 South 52nd Avenue, Chicago 50, Illinois; **New York:** 381 Fourth Avenue, New York City 16, New York; **Canada:** G. S. BLAKESLEE & CO. LTD., 18 Cranfield Road, Toronto 13.

**BLACOSOLV IS STOCKED IN WAREHOUSES FROM COAST TO COAST.*

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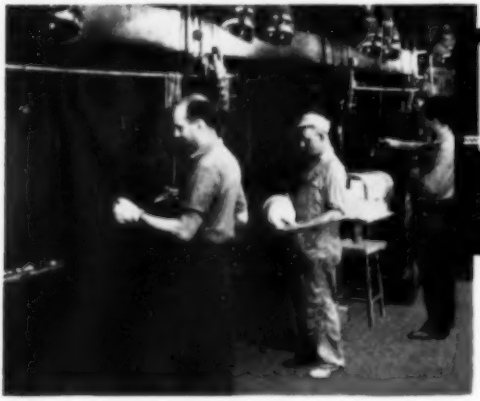
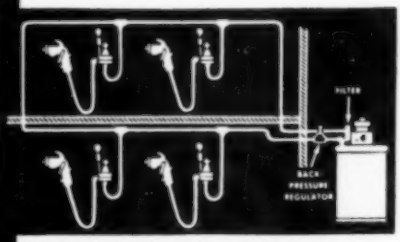
SAVE TIME

on the FINISHING LINE with HIGH-OUTPUT VERSATAL PUMPS





Here's the Versatal System

Shown here operating on two floors from a common mixing room source, this full circulating system saves you time, money, materials—gives you unequalled finishing quality and uniformity.

PUMP PAINT DIRECT FROM MIXING ROOM TO SPRAY BOOTHS!

Delays and downtime—danger of fire—rejects and refinishing due to a lack of uniformity or mismatching—all these problems and more are licked with a full circulating system powered by a Versatal Pump. Such a system permits pumping direct from the mixing room, eliminates drum racking and costly delays for refilling and recapping pressure pots.

And the Versatal is designed to deliver more paint per pound of air used than any pump—makes possible *a delivery rate as high as 27 gallons per minute!* Self-adjusting air piston requires no oiling—open frame design separates pump from air motor—no danger of fouling. Versatal Pumps are available with 4¼" or 6½" motors, 22 models, five types of pump tube.

NEW VERSATAL PRESSURE REGULATOR

Handles low or high pressures equally well. Gives you perfect nozzle control—avoids uneven coverage—saves time, money and materials!

A PRODUCT OF SW STEWART-WARNER

ALEMITE Versatal SPRAY-PUMP EQUIPMENT

1830 Diversey Parkway, Chicago 14, Illinois

STURLON an entirely new Metal Finish . boosts sales of Sturgis Posture Chairs . . .

The Sturgis Posture Chair Company of Sturgis, Michigan, is setting new sales records with its metal office chairs, thanks to STURLON, an entirely new type of metal finish, manufactured exclusively by Advance.

Independent laboratory tests show STURLON has a resistance to abrasion many times greater than that of other finishes. Due to its extra film thickness, STURLON makes metal more static-resistant, warm and pleasant to the touch; gives light metal a heavy metal sound. STURLON is non-corrosive—it is unaffected by moisture, salt air, humidity or temperature changes. It's non-fading. Laboratory tests show no apparent color change in STURLON, even after 370 hours in the Fadeometer.

STURLON is available in most colors. For details, write, wire or phone Advance today.

Advance PAINT COMPANY

Indianapolis Indiana

MANUFACTURERS OF INDUSTRIAL FINISHES

Shipped Complete, Tested, Ready-to-Operate!

At left: Electrically heated, automatically controlled oven for baking insulating varnish on coils, stators and other parts at Internat'l. G. E. Service Shop, Mexico City.

At right: Steam heated, 22 foot long oven for removal of moisture from paper filters used in acetate yarn manufacture at Tennesse Eastman Corp., Kingsport, Tennessee.

READY TO USE when they reach your plant, production-size ovens are built, tested and shipped complete from the KIRK & BLUM plant. Your production through the oven starts just as soon as necessary connections are made . . . there's no tie-up for erection, testing or adjustment in your plant. You save time, money and avoid production delays.

From mammoth conveyor ovens for high production to the smallest of laboratory units, KIRK & BLUM builds many types of industrial ovens for a multitude of uses. Typical installations are shown in "Industrial Ovens" Booklet. Write for your copy today.

The Kirk & Blum Mfg. Co.,
3131 Forrer St.,
Cincinnati 9, Ohio.

KIRK AND BLUM
INDUSTRIAL OVENS